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PRELIMS EXAM 2026

GENERAL KNOWLEDGE AND GENERAL SCIENCE

Volume 3

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CHAPTER-WISE MCQ BANK

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Rajasthan State and Subordinate Services Combined Competitive (Preliminary) Examination

-: Scheme & Syllabus of Examination: - Dated 09-01-2026

The Preliminary Examination will consist of one paper on the subject specified below, which will be of objective type and carry a maximum of 200 marks.

The examination is meant to serve as a screening test only. The Standard of the paper will be that of a Bachelor's Degree Level. The marks obtained in the Preliminary Examination by the candidates, who are declared qualified for admission to Main Examination will not be counted for determining their final order of merit.

Subject	Max Marks	Time
General Knowledge and General Science	200	3 Hours

Note-

1. There will be 150 questions of multiple choice (Objective Type), carrying equal marks.
2. There will be negative marking 1/3 mark will be deducted for each wrong answer.

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INDIA

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- Physical Aspects: - Mountains, Plateaus, Plains & Deserts
- Major Rivers & Lakes
- Natural Vegetation
- Agriculture: Type, Distribution & important crops
- Major Industrial Regions and Industries.
- Transport Network.
- Environmental Issues- Desertification, Deforestation, Climate Change & Global Warming, Ozone Layer Depletion.

Geography of India:

- Physiographic division
- Climate
- Major Rivers and Lakes
- Irrigation
- Agriculture: Important Crops
- Minerals- Metallic and Non- Metallic
- Major Industrial Regions and Important industries

Geography of Rajasthan

- Rajasthan: Location, Extent and Physiography
- Rivers and Lakes
- Climatic characteristics
- Natural Vegetation, Biodiversity & Conservation
- Soil
- Agriculture
- Livestock
- Irrigation
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- Urbanization
- Tribes
- Minerals-Metallic & Non-Metallic
- Tourism

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- Framing of the Constitution, Preamble, Citizenship, Fundamental Rights, Directive Principles of State Policy and fundamental Duties.
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- Union State Relations, Emergency provisions.
- Urban and Rural local Government.
- Election Commission, Union Public Service Commission, National Human Rights Commission, National Commission for women, National Commission for Protection of Child Rights and Niti Aayog.
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- Lokpal, Central Vigilance Commission, Central Information Commission.

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- Governor, Chief Minister and Council of Ministers, Rajasthan Legislative Assembly, the Rajasthan High Court, Subordinate Courts and other judicial bodies, Advocate General.
- Chief Secretary State Secretariate, Directorates of Various departments, Divisional Commissioner, District Collector/District Magistrate, Superintendent of Police, Sub-divisional Officer, Tehsildar.
- Rajasthan Public Service Commission, Rajasthan State Election Commission, Rajasthan Information Commission, Rajasthan State Women Commission, Board of Revenue, Lokayukt.
- Administration of Panchayati Raj and Municipalities in Rajasthan.

Economic Concepts and Indian Economy

- Economic Growth and Development. Environmental Degradation and Sustainable Development.
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- Macro Overview of Economy and State budget.
- Current Status, Issues and Government Initiatives of Agriculture, Industry and Service Sector.
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- Rural Development, Panchayati Raj and State Finance Commission.
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- Major Welfare Schemes of Government of Rajasthan.

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- Human Health Care; Food and Nutrition; Diseases and Public Health Programs.
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- Statement and Argument
- Statements and Conclusion
- Statement and Courses of Action
- Analytical Reasoning/ Critical Reasoning

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- Direction sense test
- Logical Venn diagram
- Ranking and Sitting Arrangement
- Shapes and their sub sections

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- Percentage
- Simple and Compound Interest
- Perimeter and Area of Plane figures
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- Major economic and political developments.
- Significant events and achievements related to sports and games.
- Major awards, publications and distinguished authors.
- Rajasthan Public Examination (Measures for Prevention of Unfair Means in Recruitment) Act, 2022.

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Ajmer **Chief Controller of Examination**

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CHAPTER 01

Physical Landforms : Mountains, Plateaus, Plains and Deserts

1. Which of the following geological processes is primarily responsible for the formation of the world's major fold mountains?
(1) Large-scale faulting and vertical displacement of crustal blocks
(2) Crustal folding from compressive forces
(3) Accumulation and deposition of volcanic material over geological time
(4) Progressive erosion of elevated plateaus by major river systems
(5) Question not attempted

2. Match List-I (Mountain Type) with List-II (Example) and select the correct answer using the codes given below:
List-I: (Mountain Type)
A. Fold Mountain
B. Block Mountain
C. Volcanic Mountain
D. Residual Mountain
List-II: (Example)
i. Vosges
ii. Himalayas
iii. Aravalli
iv. Kilimanjaro
(1) A-ii, B-i, C-iv, D-iii
(2) A-ii, B-iii, C-iv, D-i
(3) A-i, B-ii, C-iv, D-iii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

3. Which of the following statements regarding block mountains is incorrect?
(1) They are created when large areas are broken and displaced vertically.
(2) The lowered blocks are called grabens.
(3) The uplifted blocks are termed as grabens.
(4) The Vosges mountain in Europe is an example of a block mountain system.
(5) Question not attempted

4. Consider the following statements regarding the Himalayas:
I. The Himalayas are young fold mountains formed by the collision of the Eurasian and Indo-Australian tectonic plates.
II. They represent the highest mountain system in the world.
III. They are characterized by tectonic stability and an absence of seismic activity.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

5. Identify the odd one out among the following mountains based on their mode of formation.
(1) Mount Fuji
(2) Mount Kilimanjaro
(3) Sierra Nevada
(4) Mount Vesuvius
(5) Question not attempted

6. The following question consists of two statements: one labeled Assertion (A) and the other labeled Reason (R).
Assertion (A): The Andes is the longest continental mountain range in the world.
Reason (R): The Andes were formed primarily by the divergence of the Nazca Plate and the South American Plate.
Which of the following is correct in the context of the above statements?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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7. The Alps mountain range, a major physical feature of Europe, predominantly stretches across which of the following groups of countries?
(1) Spain, Portugal, and the Pyrenees region of France
(2) Germany, Poland, and the western parts of Ukraine
(3) Norway, Sweden, and the northern parts of Finland
(4) France, Switzerland, Italy, and Austria
(5) Question not attempted

8. Consider the following statements regarding the Rocky Mountains:
I. They are a massive mountain range located in western North America.
II. They were formed during the Laramide orogeny.
III. They are predominantly block mountains formed by tensional forces.
IV. Mount Elbert is the highest peak in the Rocky Mountains.
Which of the above statement(s) is/are correct?
(1) I, II, and III only
(2) I, II, and IV only
(3) II, III, and IV only
(4) I, III, and IV only
(5) Question not attempted

9. Residual mountains are primarily formed as a result of which of the following processes?
(1) Continuous deposition of wind-blown sand in arid regions
(2) Convergence and subduction of massive continental plates
(3) Long-term denudation of an existing elevated area
(4) Successive upwelling of magma through a central volcanic vent
(5) Question not attempted

10. Which of the following represents the correct sequence of major continental mountain ranges in decreasing order of their approximate physical length?
(1) Andes, Rockies, Himalayas, Alps
(2) Andes, Himalayas, Rockies, Alps
(3) Rockies, Andes, Himalayas, Alps
(4) Himalayas, Andes, Rockies, Alps
(5) Question not attempted

11. The Black Forest mountain, a prominent example of a block mountain, is located in which country?
(1) France
(2) Switzerland
(3) Italy
(4) Germany
(5) Question not attempted

12. Match List-I (Mountain Range) with List-II (Continent) and select the correct answer using the codes given below:
List-I: (Mountain Range)
A. Andes
B. Alps
C. Rockies
D. Himalayas
List-II: (Continent)
i. North America
ii. Asia
iii. South America
iv. Europe
(1) A-i, B-ii, C-iii, D-iv
(2) A-iii, B-iv, C-i, D-ii
(3) A-iii, B-i, C-iv, D-ii
(4) A-iv, B-iii, C-i, D-ii
(5) Question not attempted

13. Which of the following pairs of volcanic mountains and their respective countries is correctly matched?
(1) Mount Fuji - islands of Indonesia
(2) Mount Vesuvius - mainland of Spain
(3) Mount Kilimanjaro - Tanzania
(4) Mount Krakatoa - nation of Japan
(5) Question not attempted

14. Consider the following statements regarding the Himalayas:
I. They act as a climatic divide for the Indian subcontinent.
II. They are the source of perennial rivers like the Ganga and Brahmaputra.
III. They contain a rich variety of flora and fauna due to diverse altitudinal zones.
IV. They consist strictly of igneous rocks with no sedimentary formations.
V. They prevent the cold continental air masses of Central Asia from entering India.
Which of the above statement(s) is/are correct?
(1) I, II, III, and IV only

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(2) I, II, III, and V only
(3) II, III, IV, and V only
(4) I, III, IV, and V only
(5) Question not attempted

15. The formation of the Sierra Nevada mountains in the United States is predominantly an example of which type of mountain building?
(1) Block mountain formation
(2) Fold mountain formation
(3) Volcanic rock accumulation
(4) Residual weathering effects
(5) Question not attempted

16. What is the primary cause for the formation of a rift valley alongside block mountains?
(1) Intense horizontal compression folding the upper lithosphere
(2) Crustal fracturing and subsidence from tensional forces
(3) Sustained glacial erosion carving out a deep U-shaped valley
(4) Continuous wind erosion stripping away soft sedimentary rocks
(5) Question not attempted

17. A plateau that is entirely or partially enclosed by mountain ranges is geographically termed as:
(1) Continental plateau
(2) Intermontane plateau
(3) Piedmont plateau
(4) Volcanic plateau
(5) Question not attempted

18. The following question consists of two statements: one labeled Assertion (A) and the other labeled Reason (R).
Assertion (A): The Tibetan Plateau plays a crucial role in the development of the Indian Summer Monsoon.
Reason (R): The intense summer heating of the Tibetan Plateau establishes a strong thermal low-pressure area, drawing moisture-laden winds from the Indian Ocean.
Which of the following is correct in the context of the above statements?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

19. Which of the following statements regarding the Deccan Plateau is incorrect?
(1) A large plateau covering western and southern parts of India
(2) A region formed primarily by massive fissure-type volcanic eruptions
(3) Soil composed of light-colored, acidic sands
(4) An area rich in mineral resources supporting the cultivation of cotton
(5) Question not attempted

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20. Arrange the following major plateaus in order from North to South based on their general geographical location:
I. Tibetan Plateau
II. Deccan Plateau
III. Katanga Plateau
IV. Patagonian Plateau
Select the correct order from the options given below:
(1) I, II, III, IV
(2) II, I, III, IV
(3) I, III, II, IV
(4) I, II, IV, III
(5) Question not attempted

21. The Brazilian Plateau is renowned globally for the extensive reserves of which of the following minerals?
(1) Coal and Uranium
(2) Copper and Zinc
(3) Iron ore and Manganese
(4) Petroleum and Natural Gas
(5) Question not attempted

22. Match List-I (Plateau Name) with List-II (Type of Plateau) and select the correct answer using the codes given below:
List-I: (Plateau Name)
A. Tibetan Plateau
B. Deccan Plateau
C. Patagonian Plateau
D. Antarctic Plateau
List-II: (Type of Plateau)
i. Continental Plateau
ii. Piedmont Plateau
iii. Volcanic Plateau
iv. Intermontane Plateau

(1) A-i, B-ii, C-iii, D-iv
(2) A-iv, B-iii, C-ii, D-i
(3) A-iv, B-ii, C-iii, D-i
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

23. The African Plateau is highly significant to the global economy primarily because:
(1) It contains the world's largest expanse of fertile alluvial plains.
(2) It serves as a major hub for global rice production.
(3) It is completely devoid of desert landscapes, allowing continuous agriculture.
(4) Vast reserves of gold, diamonds, and copper
(5) Question not attempted

24. Consider the following statements regarding the African Plateau:
I. Much of the African continent consists of elevated plateau regions.
II. The East African Plateau is deeply fragmented by the Great Rift Valley system.
III. The plateau region strictly receives snowfall throughout the year due to high latitudes.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) II only
(3) III only
(4) I and II only
(5) Question not attempted

25. Identify the odd one out among the following regions based on their dominant landform classification as plateaus.
(1) Anatolian
(2) Katanga
(3) Amazon
(4) Colorado
(5) Question not attempted

26. Which of the following is the most appropriate description of the soil formation on the Deccan Plateau?
(1) Black soils formed by the weathering of basaltic lava flows
(2) Red soils formed by the weathering of ancient metamorphic rocks
(3) Alluvial soils deposited by the peninsular rivers
(4) Laterite soils formed under strictly cold climates
(5) Question not attempted

27. The Tibetan Plateau is bordered by which two major mountain ranges to its south and north respectively?
(1) Karakoram and Hindu Kush
(2) Tian Shan and Altai Mountains
(3) Himalayas and Zagros Mountains
(4) Himalayas and Kunlun Mountains
(5) Question not attempted

28. Consider the following statements regarding major world plateaus:
I. The Patagonian plateau is an example of a piedmont plateau.
II. The Deccan plateau slopes generally from east to west.
III. The Tibetan plateau is known as the "Roof of the World".
IV. The Brazilian plateau occupies a large portion of eastern South America.
Which of the above statement(s) is/are correct?
(1) I, II, and III only
(2) I, III, and IV only
(3) II, III, and IV only
(4) I, II, III, and IV
(5) Question not attempted

29. The Loess Plateau, highly susceptible to wind and water erosion, is primarily located in which country?
(1) India
(2) United States
(3) China
(4) Argentina
(5) Question not attempted

30. Which of the following is an accurate characteristic of continental plateaus?
(1) Elevated plains formed primarily at the foot of mountain ranges
(2) High-altitude terrains surrounded entirely by mountains
(3) Regions consisting entirely of active and dormant volcanic vents
(4) Extensive areas rising abruptly from bordering lowlands
(5) Question not attempted

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31. The Colorado Plateau in the United States is frequently cited as a classic example of which phenomenon?
(1) Deeply incised sedimentary rock forming massive canyons
(2) Extensive glacial outwash plains from melting ice sheets
(3) Regional tectonic subsidence forming a massive inland basin
(4) Wind-driven deposition forming extensive sand dune networks
(5) Question not attempted

32. Match List-I (Plateau) with List-II (Region/Country) and select the correct answer using the codes given below:
List-I: (Plateau)
A. Anatolian Plateau
B. Katanga Plateau
C. Kimberley Plateau
D. Mexican Plateau
List-II: (Region/Country)
i. Australia
ii. Turkey
iii. North America
iv. Democratic Republic of Congo
(1) A-ii, B-i, C-iv, D-iii
(2) A-ii, B-iv, C-i, D-iii
(3) A-iv, B-ii, C-iii, D-i
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

33. In geomorphology, a broad, relatively flat land surface formed as the end stage of fluvial erosion is called:
(1) Pediplain
(2) Peneplain
(3) Floodplain
(4) Outwash plain
(5) Question not attempted

34. Consider the following statements regarding the Indo-Gangetic Plain:
I. It is formed by the aggradational work of the Indus, Ganga, and Brahmaputra river systems.
II. It is one of the most densely populated regions in the world.
III. It features highly fertile alluvial soil ideal for intensive agriculture.
IV. The older alluvium in this plain is known as Khadar.
V. The plain has a very gentle slope toward the sea.
Which of the above statement(s) is/are correct?
(1) I, II, III, and V only
(2) I, II, IV, and V only
(3) II, III, IV, and V only
(4) I, III, IV, and V only
(5) Question not attempted

35. Alluvial plains are generally characterized by:
(1) Regions of steep gradients and rapid river flows
(2) Abundant accumulation of coarse-grained glacial till
(3) Deep deposits of silt and clay left by flooding
(4) Widespread distribution of volcanic basaltic layers
(5) Question not attempted

36. What is the primary cause for the relatively low human population density in the massive plains of the Amazon Basin?
(1) Complete lack of accessible freshwater resources
(2) Extremely cold winters preventing year-round agriculture
(3) High frequency of severe and destructive tectonic earthquakes
(4) Dense rainforests and an unhealthy, humid climate
(5) Question not attempted

37. Identify the odd one out based on the dominant agent of formation for the given plain types.
(1) Alluvial plain
(2) Flood plain
(3) Loess plain
(4) Deltaic plain
(5) Question not attempted

38. The following question consists of two statements: one labeled Assertion (A) and the other labeled Reason (R).
Assertion (A): Loess plains are often highly productive agricultural areas.
Reason (R): Loess consists of fine-grained, wind-blown silt that is well-aerated and rich in minerals.
Which of the following is correct in the context of the above statements?

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(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

39. The Great Plains of North America were primarily formed by which sequence of long-term geological events?
(1) Successive volcanic eruptions followed by intense wind erosion
(2) Subduction of the Pacific Plate lifting the coastal margin
(3) Large-scale collapse of massive subterranean limestone caves
(4) Rocky Mountain outwash and northern glacial action
(5) Question not attempted

40. A plain that borders a sea or an ocean and is formed by marine deposition or emergence is specifically termed a:
(1) Coastal plain
(2) Abyssal plain
(3) Alluvial plain
(4) Lacustrine plain
(5) Question not attempted

41. Which of the following statements correctly describes the plains of the Amazon Basin?
(1) They are temperate grasslands suited for wheat cultivation.
(2) They are formed entirely by glacial outwash deposits.
(3) They constitute the largest tropical rainforest lowland in the world.
(4) They represent a major dry, cold desert ecosystem.
(5) Question not attempted

42. Match List-I (Type of Plain) with List-II (Formative Agent) and select the correct answer using the codes given below:
List-I: (Type of Plain)
A. Alluvial plain
B. Glacial outwash plain
C. Coastal plain
D. Loess plain
List-II: (Formative Agent)
i. Melting ice and meltwater
ii. Wind deposition
iii. River deposition
iv. Marine processes and sea-level changes
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-iii, C-ii, D-iv
(3) A-iii, B-iv, C-i, D-ii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

43. The extensive wheat farming observed in the Great Plains of North America is most appropriately linked to which physical characteristic of the region?
(1) High annual rainfall consistently exceeding 200 cm
(2) Direct proximity to large and busy coastal seaports
(3) Abundant supply of tropical timber providing shelter
(4) Vast, flat, and fertile temperate grasslands
(5) Question not attempted

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44. Consider the following statements about the geomorphology of the Indo-Gangetic plain:
I. The Bhabar belt is highly porous due to the deposition of coarse pebbles.
II. Streams disappear in the Bhabar and re-emerge in the Terai region.
III. The Bhangar represents the newer alluvium deposited by floodwaters annually.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

45. In the context of the Indo-Gangetic plains, the marshy and swampy tract covered with thick forests located immediately south of the Bhabar belt is known as:
(1) Khadar
(2) Bhangar
(3) Terai
(4) Reh
(5) Question not attempted

46. Which of the following pairs concerning the types of plains and their characteristics is incorrectly matched?

(1) Lacustrine Plains - Formed by the filling up of lakes
(2) Karst Plains - Formed by the dissolution of limestone
(3) Peneplains - Formed by prolonged fluvial erosion
(4) Till Plains - Formed by fine-grained aeolian deposition
(5) Question not attempted

47. Which geological agent is fundamentally responsible for the transport and deposition of material to create Loess plains?
(1) Wind
(2) River water
(3) Ocean currents
(4) Moving glaciers
(5) Question not attempted

48. Consider the following statements regarding glacial plains:
I. They are formed by the erosional and depositional work of glaciers.
II. A till plain is an uneven surface of unstratified glacial drift.
III. An outwash plain is composed of stratified drift deposited by meltwater.
IV. They are exclusively found in equatorial latitudes.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) II and III only
(3) IV only
(4) I, II, and IV only
(5) Question not attempted

49. In geographic classification, a region is generally classified as a desert primarily based on which of the following criteria?
(1) Constant extremely high temperatures throughout the year
(2) Severe moisture deficit with low annual precipitation
(3) Massive abundance of sand dunes and total lack of soil
(4) Total absence of permanent human habitation and life
(5) Question not attempted

50. Which of the following represents the correct sequence of the given deserts in decreasing order of their approximate total geographic area?
(1) Sahara, Arabian, Gobi, Atacama
(2) Arabian, Sahara, Gobi, Atacama
(3) Sahara, Gobi, Arabian, Atacama
(4) Sahara, Arabian, Atacama, Gobi
(5) Question not attempted

51. Which of the following statements distinguishing hot and cold deserts is incorrect?
(1) Hot deserts are typically located between 15° and 30° latitudes, whereas cold deserts are found in higher latitudes or at high altitudes.
(2) The Sahara is an example of a hot desert, while the Gobi is an example of a cold desert.
(3) Cold deserts do not experience any form of precipitation, whereas hot deserts receive winter snowfall.
(4) Both hot and cold deserts possess specialized xerophytic flora.
(5) Question not attempted

52. Match List-I (Desert) with List-II (Continent) and select the correct answer using the codes given below:
List-I: (Desert)
A. Sahara
B. Atacama
C. Gobi
D. Great Victoria
List-II: (Continent)
i. South America
ii. Asia
iii. Australia
iv. Africa
(1) A-iv, B-ii, C-i, D-iii
(2) A-i, B-iv, C-ii, D-iii
(3) A-ii, B-i, C-iv, D-iii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

53. The extreme aridity of the Atacama Desert is primarily attributed to which of the following geographic phenomena?
(1) Its situation in the interior of a massive landmass
(2) High evaporation rates due to its equatorial position

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(3) The Humboldt Current and the Andes rain shadow
(4) Rapid deforestation caused by early human settlements
(5) Question not attempted

54. Consider the following statements about the Sahara Desert:
I. It is the largest hot desert in the world.
II. It covers large parts of North Africa.
III. Its landscape is uniform, consisting entirely of sand dunes (ergs) with no rocky plateaus.
IV. The Nile River flows through a portion of this desert.
V. It lies entirely within the southern hemisphere.
Which of the above statement(s) is/are correct?
(1) I, II, and IV only
(2) I, II, and III only
(3) II, IV, and V only
(4) I, III, IV, and V only
(5) Question not attempted

55. The Gobi Desert, renowned for its vast barren expanses and rocky terrain, is categorized as a:
(1) Coastal desert
(2) Subtropical hot desert
(3) Trade-wind desert
(4) Mid-latitude cold desert
(5) Question not attempted

56. Which of the following best demonstrates the concept of 'desertification'?
(1) Land degradation in dry areas from climate and humans
(2) Natural desert formation due to tectonic shifting over time
(3) Sudden deposition of sand by massive dust storms at coasts
(4) Seasonal drying of deciduous forests during winter months
(5) Question not attempted

57. Identify the odd one out among the following deserts based on their classification as either 'hot' or 'cold'.
(1) Mojave
(2) Kalahari
(3) Patagonian
(4) Great Sandy
(5) Question not attempted

58. The following question consists of two statements: one labeled Assertion (A) and the other labeled Reason (R).
Assertion (A): The Arabian Desert is an extremely hot and dry region.
Reason (R): It is geographically located under the influence of the subtropical high-pressure belt, which promotes descending dry air.
Which of the following is correct in the context of the above statements?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

59. The Atacama Desert is economically highly significant for its naturally occurring deposits of which of the following?
(1) Coal and Peat
(2) Bauxite and Iron ore
(3) Uranium and Thorium
(4) Sodium Nitrate and Copper
(5) Question not attempted

60. Arrange the following hot deserts in order from West to East based on their geographical location globally:
I. Atacama Desert
II. Sahara Desert
III. Arabian Desert
IV. Thar Desert
Select the correct order from the options given below:
(1) I, II, III, IV
(2) II, I, III, IV
(3) I, III, II, IV
(4) II, III, I, IV
(5) Question not attempted

61. The 'Rub' al Khali', often known as the Empty Quarter, is a major feature of which of the following desert regions?
(1) Sahara Desert
(2) Gobi Desert
(3) Arabian Desert
(4) Thar Desert
(5) Question not attempted

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62. Match List-I (Local Desert Feature) with List-II (Description) and select the correct answer using the codes given below:
List-I: (Local Desert Feature)
A. Erg
B. Reg
C. Hamada
D. Wadi
List-II: (Description)
i. Rocky desert plateau
ii. Sandy desert with dunes
iii. Dry riverbed
iv. Stony desert plain
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

63. Oases are vital features in desert environments. Which of the following processes predominantly leads to their formation?
(1) Wind deflation reaching the underground water table
(2) Volcanic hot springs breaking through the surface
(3) Artificial borewells drilled by early civilizations
(4) Condensation of heavy coastal fogs in desert valleys
(5) Question not attempted

64. Consider the following statements regarding cold deserts:
I. They are typically found in temperate regions at higher latitudes.
II. Precipitation often falls as snow rather than rain.
III. The Gobi and Patagonian deserts are prominent examples.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

65. The Thar Desert is predominantly located in which two countries?
(1) India and Afghanistan
(2) India and Pakistan
(3) India and Bangladesh
(4) Pakistan and Iran
(5) Question not attempted

66. Which of the following is the most accurate statement describing the rainfall pattern in the Thar Desert region of Rajasthan?
(1) Erratic rainfall decreasing from east to west
(2) Uniformly distributed rainfall of 100 cm annually
(3) Copious winter rainfall from the Summer Monsoon
(4) Maximum rainfall occurring in pre-monsoon seasons
(5) Question not attempted

67. Which of the following is the only major seasonal river that flows through the arid plains of the Thar Desert in Rajasthan?
(1) Banas
(2) Chambal
(3) Luni
(4) Mahi
(5) Question not attempted

68. Consider the following statements regarding the Thar Desert:
I. It is bounded by the Aravalli range to the east.
II. It is the most densely populated desert in the world.
III. The predominant soil type in this region is black cotton soil.
IV. Indira Gandhi Canal has significantly altered the agricultural landscape of its north-western part.
Which of the above statement(s) is/are correct?
(1) I, II, and III only
(2) I, II, and IV only
(3) II, III, and IV only
(4) I, III, and IV only
(5) Question not attempted

69. Identify the odd one out among the following deserts, considering their geographical location within the continent of Asia.
(1) Thar Desert
(2) Gobi Desert
(3) Mojave Desert
(4) Arabian Desert
(5) Question not attempted

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70. How does the orientation of the Aravalli Range primarily contribute to the aridity of the Thar Desert in Rajasthan?
(1) Blocking moisture-laden winds from the Bay of Bengal
(2) Parallel orientation to the Arabian Sea monsoon
(3) Radiating intense heat that evaporates cloud formations
(4) Funneling Himalayan winds directly into the plains
(5) Question not attempted

71. In the physiographic division of Rajasthan, the extremely arid region characterized by extensive sand dunes and almost negligible vegetation is locally referred to as:
(1) Baggard
(2) Rohi
(3) Khadar
(4) Marusthali
(5) Question not attempted

72. Match List-I (Features of Thar Desert) with List-II (Description) and select the correct answer using the codes given below:
List-I: (Features of Thar Desert)
A. Barchan
B. Playa
C. Rann
D. Dhrian
List-II: (Description)
i. Shallow, temporary salt lakes
ii. Shifting sand dunes
iii. Saline marshy tracts
iv. Crescent-shaped sand dunes
(1) A-iv, B-i, C-iii, D-ii
(2) A-ii, B-i, C-iv, D-iii
(3) A-iv, B-iii, C-i, D-ii
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

73. When comparing the Thar Desert with other major hot deserts like the Sahara or Arabian, which demographic characteristic uniquely defines the Thar?
(1) A region entirely devoid of permanent settlements
(2) Strict reliance on nomadic tribes with no agriculture
(3) High human and livestock population density
(4) A region characterized by very low linguistic diversity
(5) Question not attempted

74. Consider the following statements about global physical landforms:
I. Fold mountains are associated with constructive plate boundaries.
II. The Deccan plateau is an example of a flood basalt province.
III. The Amazon plain is formed exclusively by glacial deposition.
IV. The Sahara desert spans across the Tropic of Cancer.
V. Block mountains feature prominent grabens and horsts.
Which of the above statement(s) is/are incorrect?
(1) I and III only
(2) II, IV, and V only
(3) I, III, and V only
(4) II and IV only
(5) Question not attempted

75. Which of the following statements comparing different landforms is incorrect?
(1) Mountains generally have steeper slopes and a smaller summit area compared to plateaus.
(2) Plateaus are elevated flatlands that can be structurally complex compared to plains.
(3) Deserts can occur on plains, plateaus, and even amidst mountain ranges.
(4) All plains worldwide are formed exclusively by the depositional work of rivers.
(5) Question not attempted

76. Which of the following pairs concerning the physical features of the Thar Desert is correctly matched?
(1) Luni River - Originates from the Himalayas
(2) Indira Gandhi Canal - Sources water from the Harike Barrage
(3) Sambhar Lake - A major freshwater lake
(4) Barchans - Longitudinal sand dunes found parallel to wind direction
(5) Question not attempted

77. The continuous formation and shifting of sand dunes in the Thar Desert is an effect of which dominant geomorphic process?

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(1) Fluvial erosion
(2) Glacial plucking
(3) Aeolian transportation and deposition
(4) Tectonic subduction
(5) Question not attempted

78. In the context of Rajasthan's geography, Barchan dunes are particularly significant. What is their primary distinguishing physical characteristic?
(1) They are long, straight ridges of sand parallel to the wind direction.
(2) They are star-shaped dunes with multiple arms formed by variable winds.
(3) They are stationary dunes anchored firmly by dense desert shrubs.
(4) They are crescent-shaped dunes with the horns pointing downwind.
(5) Question not attempted

79. While studying major fold mountains, Mount Blanc is noted as the highest peak of which of the following mountain ranges?
(1) The Alps
(2) The Rockies
(3) The Andes
(4) The Himalayas
(5) Question not attempted

80. Which of the following is the most appropriate statement regarding the economic significance of the Thar Desert for Rajasthan?
(1) It acts as a complete drain on essential state resources
(2) Potential for renewable energy and mineral wealth
(3) No potential for energy due to severe desert dust storms
(4) Value limited to fishing along ancient, dried-out coasts
(5) Question not attempted

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ANSWERS

1. (2) Crustal folding from compressive forces
Fold mountains are created through the process of orogeny when tectonic plates collide. This collision generates massive horizontal compressive forces that cause the Earth's crust to buckle and fold over millions of years. This pressure pushes rock layers upward, forming high peaks and deep valleys. Examples include the Himalayas, Alps, and Andes ranges, which shape global geography and climate patterns.

2. (1) A-ii, B-i, C-iv, D-iii
Mountains are classified by their origin. Fold mountains like the Himalayas form from plate collisions. Block mountains like the Vosges result from vertical displacement. Volcanic mountains like Kilimanjaro arise from accumulated lava and ash. Residual mountains like the Aravallis remain after long periods of erosion. These diverse landforms illustrate how various geological forces continuously shape the global landscape over time.

3. (3) The uplifted blocks are termed as grabens.
Block mountains form when large crustal areas are fractured and displaced vertically along fault lines. The uplifted sections of the crust are scientifically identified as horsts, while the sunken or lowered segments are called grabens. These geological features are typical in areas experiencing tectonic tension. The Vosges and Black Forest mountains serve as prominent examples of this specific structural formation.

4. (1) I and II only
The Himalayas are young fold mountains created by the collision between the Eurasian and Indo-Australian tectonic plates. They comprise the world's highest peaks, providing a massive physical barrier across Asia. Unlike stable regions, this mountain system is tectonically active, making it highly prone to frequent seismic activities and earthquakes. This geological instability proves that the mountain-building process continues today.

5. (3) Sierra Nevada
Mount Fuji, Mount Kilimanjaro, and Mount Vesuvius are all volcanic mountains formed by the accumulation of erupted materials like lava and ash. In contrast, the Sierra Nevada is a block mountain system created by the vertical displacement of crustal blocks along fault lines. This difference in primary geological origin makes the Sierra Nevada distinct from the others in the group.

6. (3) A is true but R is false
The Andes mountain range is the longest continental mountain range on Earth, stretching along the western coast of South America. However, its formation is due to the convergence and subduction of the Nazca Plate under the South American Plate, not divergence. This massive tectonic collision generated the intense compressive forces necessary to uplift the crust and create these towering peaks.

7. (4) France, Switzerland, Italy, and Austria
The Alps represent a major young fold mountain system situated in south-central Europe. This extensive range stretches across several countries, most notably covering significant portions of France, Switzerland, Italy, and Austria. These mountains were formed by the collision of the African and Eurasian tectonic plates. They play a vital role in determining European climate patterns and support diverse alpine ecosystems.

8. (2) I, II, and IV only
The Rocky Mountains are a massive fold mountain range in western North America, formed primarily during the Laramide orogeny. Unlike block mountains, they resulted from tectonic plate subduction and horizontal compression. Mount Elbert stands as the highest peak within this expansive system. These mountains are crucial for regional water supplies and host diverse wildlife habitats throughout their high-altitude environments.

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9. (3) Long-term denudation of an existing elevated area
Residual mountains, also known as mountains of circumdenudation, are formed when existing elevated landforms like plateaus or old mountain ranges are subjected to prolonged erosion. Agents such as wind, water, and ice wear away the softer rocks, leaving behind more resistant rock masses as standing peaks. The Aravalli Range in India is a classic example of this geological landform.

10. (1) Andes, Rockies, Himalayas, Alps
Continental mountain ranges vary significantly in physical extent. The Andes in South America is the longest range, followed by the Rocky Mountains in North America. The Himalayas in Asia, while having the highest peaks, rank third in total length. The Alps in Europe are considerably shorter in comparison to these three massive systems. This sequence reflects their respective continental spans.

11. (4) Germany
The Black Forest is a prominent mountain range located in southwestern Germany. It is a classic example of a block mountain, formed by the tectonic uplift of crustal blocks. It is bordered by the Rhine valley, which functions as a graben. The region is famous for its dense evergreen forests, scenic landscapes, and significant geological history within the European continent.

12. (2) A-iii, B-iv, C-i, D-ii
Major mountain ranges define the physical geography of continents. The Andes are situated in South America, while the Alps are a central feature of Europe. The Rocky Mountains span the western part of North America, and the Himalayas are located in Asia. Each range was formed by specific tectonic processes and significantly influences the climate and ecology of its respective continent.

13. (3) Mount Kilimanjaro - Tanzania
Volcanic mountains are created by the accumulation of lava and pyroclastic materials. Mount Kilimanjaro is the highest peak in Africa, located in Tanzania. Mount Fuji is a famous volcanic cone in Japan, not Indonesia. Mount Vesuvius is located in Italy, while Mount Krakatoa is situated in Indonesia. Understanding these geographic locations is essential for studying global volcanic activity and landforms.

14. (2) I, II, III, and V only
The Himalayas function as a major climatic divide, blocking cold Siberian winds and trapping monsoon moisture. They provide a perennial water source for rivers like the Ganga and Brahmaputra. While rich in biodiversity, they are not composed strictly of igneous rocks; they contain significant sedimentary formations. Their height prevents frigid air masses from Central Asia from cooling the Indian subcontinent.

15. (1) Block mountain formation
The Sierra Nevada range in the western United States is a primary example of block mountain formation. It was created through the vertical displacement of massive crustal blocks along fault lines. As the Earth's crust stretched, certain blocks were uplifted to form high peaks, while others subsided. This process creates the characteristic steep eastern slopes and gradual western inclinations seen today.

16. (2) Crustal fracturing and subsidence from tensional forces
Rift valleys are formed when the Earth's crust experiences intense tensional forces that cause it to fracture. This geological stretching leads to the downward subsidence of a central block of land between two parallel faults. The resulting sunken valley is often flanked by uplifted block mountains. The Great Rift Valley in Africa is the most prominent global example of this phenomenon.

17. (2) Intermontane plateau
An intermontane plateau is a high-altitude, relatively flat landform that is completely or partially surrounded by mountain ranges. These plateaus are formed during the same tectonic events that uplift the surrounding mountains. The Tibetan Plateau, located between the Himalayas and the Kunlun Mountains, is the most famous example. Such regions often experience unique climatic conditions due to their high elevation.

18. (1) Both A and R are true and R is the correct explanation of A.
The Tibetan Plateau is crucial for the Indian Summer Monsoon. During summer, this vast,

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high-altitude region absorbs significant solar radiation, becoming much warmer than the surrounding atmosphere. This heating creates a strong thermal low-pressure cell. This pressure gradient draws moisture-laden winds from the high-pressure area over the Indian Ocean toward the subcontinent, resulting in the seasonal monsoon rains.

19. (3) Soil composed of light-colored, acidic sands
The Deccan Plateau covers vast areas of southern and western India. It originated from massive fissure-type volcanic eruptions that deposited thick layers of basaltic lava. The weathering of these volcanic rocks produces rich, dark black soils known for moisture retention and suitability for cotton cultivation. Consequently, the description of the region as having light-colored, acidic sandy soil is scientifically inaccurate.

20. (1) I, II, III, IV
Geographic plateaus are distributed across different latitudes globally. The Tibetan Plateau is located in Central Asia, making it the northernmost in this list. Moving south, the Deccan Plateau occupies the Indian subcontinent. Further south, the Katanga Plateau is situated in Central Africa. Finally, the Patagonian Plateau is located at the southern tip of South America, completing the north-to-south sequence.

21. (3) Iron ore and Manganese
The Brazilian Plateau, a vast upland region in South America, is geologically ancient and highly stable. It is world-renowned for its immense mineral wealth, particularly its massive reserves of high-grade iron ore and manganese. These resources are foundational to Brazil's industrial economy and its role as a global exporter. The plateau also contains significant deposits of gold, diamonds, and bauxite.

22. (2) A-iv, B-iii, C-ii, D-i
Plateaus are classified by their geological setting and origin. The Tibetan Plateau is intermontane, surrounded by mountains. The Deccan Plateau is volcanic, formed by lava flows. The Patagonian Plateau is a piedmont type, located at the foot of the Andes. The Antarctic Plateau is a continental plateau, representing a massive elevated shield. These categories help geographers understand the diverse history of landforms.

23. (4) Vast reserves of gold, diamonds, and copper
The African Plateau is a massive, elevated landmass that dominates the continent's geography. It is of immense global economic importance due to its extraordinary mineral wealth. The region contains some of the world's largest deposits of gold, diamonds, and copper, alongside significant amounts of cobalt and platinum. These resources drive mining industries and international trade, supporting the economies of many African nations.

24. (3) III only
Much of Africa consists of high plateaus, with the East African Plateau being notably dissected by the Great Rift Valley. While these areas are elevated, they are primarily located in tropical and subtropical latitudes. Therefore, they do not receive snowfall throughout the year, except on the very highest mountain peaks. This distinguishes the plateau's general climate from high-latitude polar regions.

25. (3) Amazon
The Anatolian Plateau, Katanga Plateau, and Colorado Plateau are all distinct elevated flatlands characterized by their high altitude and relatively level surfaces. In contrast, the Amazon Basin is a massive low-lying alluvial plain formed by river deposition. This fundamental difference in topographic classification and elevation makes the Amazon region the odd one out when compared to the other mentioned plateaus.

26. (1) Black soils formed by the weathering of basaltic lava flows
The Deccan Plateau was formed by massive volcanic activity that spread extensive layers of basaltic lava across the region. Over millions of years, the physical and chemical weathering of these volcanic rocks has resulted in the formation of deep black soils. These soils are rich in minerals like lime and iron, making them exceptionally fertile for crops like cotton.

27. (4) Himalayas and Kunlun Mountains
The Tibetan Plateau is the highest and largest plateau in the world, often referred to as the "Roof of the World." Its geographic boundaries are defined by massive mountain ranges. To the south, it is bordered by the towering Himalayas. To the north, it is bounded by the Kunlun

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Mountains. These ranges were formed by the same tectonic collision processes between the Indian and Eurasian plates.

28. (2) I, III, and IV only
The Patagonian Plateau is a piedmont plateau located at the foot of mountains. The Tibetan Plateau is globally recognized as the "Roof of the World" due to its extreme altitude. The Brazilian Plateau covers much of eastern South America. However, the Deccan Plateau generally slopes from west to east, which is why most of its major rivers flow toward the Bay of Bengal.

29. (3) China
The Loess Plateau is a unique geographical region located in north-central China. It is characterized by thick deposits of loess, which is fine-grained, wind-blown silt. This material is highly fertile but also extremely susceptible to erosion by wind and water. The Huang He, or Yellow River, flows through this region, carrying vast amounts of yellow silt derived from these deposits.

30. (4) Extensive areas rising abruptly from bordering lowlands
Continental plateaus are massive elevated landforms that rise sharply from the surrounding lowlands or the sea. They are typically located away from mountain ranges and represent stable portions of the Earth's crust. Unlike intermontane plateaus, they are not enclosed by mountains. Examples include the Antarctic Plateau and the Brazilian Plateau. These regions often cover vast areas and have relatively level summits.

31. (1) Deeply incised sedimentary rock forming massive canyons
The Colorado Plateau in the southwestern United States is famous for its unique geological features. It consists of thick, horizontal layers of sedimentary rock that have been uplifted over time. The persistent erosional action of the Colorado River and its tributaries has carved deep, spectacular canyons into these layers. The Grand Canyon is the most prominent example of this long-term geological process.

32. (2) A-ii, B-iv, C-i, D-iii
Plateaus are major landforms found on every continent. The Anatolian Plateau occupies much of Turkey, while the Katanga Plateau is a mineral-rich region in the Democratic Republic of Congo. The Kimberley Plateau is located in northwestern Australia. The Mexican Plateau is a large highland region in North America. Each plateau has distinct geological origins and provides essential resources to its respective region.

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33. (2) Peneplain
In geomorphology, a peneplain represents the final stage of the fluvial erosion cycle. It is a broad, low-relief plain formed when agents of erosion, primarily rivers, have worn down a highland area almost to sea level. The resulting surface is nearly flat with occasional resistant hills called monadnocks. This process takes millions of years of tectonic stability and continuous weathering and transport.

34. (1) I, II, III, and V only
The Indo-Gangetic Plain is formed by the depositional work of the Indus, Ganga, and Brahmaputra rivers. It features highly fertile alluvial soil and supports one of the world's densest populations. The plain has a very gentle slope toward the sea. However, the older alluvium is known as Bhangar, while the newer, more fertile deposits found in floodplains are called Khadar.

35. (3) Deep deposits of silt and clay left by flooding
Alluvial plains are formed by the gradual accumulation of sediments deposited by rivers over long periods. These sediments, including silt, sand, and clay, are typically spread across wide areas during seasonal flooding. This process creates flat, fertile land that is highly suitable for agriculture. These plains are usually located in the lower reaches of rivers where water flow velocity decreases.

36. (4) Dense rainforests and an unhealthy, humid climate
The Amazon Basin is characterized by an equatorial climate with high temperatures and heavy rainfall throughout the year. This environment supports extremely dense tropical rainforests, which make large-scale settlement and infrastructure development difficult. Additionally, the constant high humidity and heat create an unhealthy environment prone to tropical diseases. These physical and climatic

constraints result in a relatively low human population density.

37. (3) Loess plain
Alluvial plains, flood plains, and deltaic plains are all primarily formed by the action of running water, specifically through river deposition and fluvial processes. In contrast, a loess plain is formed by the deposition of fine-grained silt carried by the wind. Because the dominant agent of formation for loess is aeolian rather than fluvial, it is the distinct outlier.

38. (1) Both A and R are true and R is the correct explanation of A.
Loess plains are exceptionally productive for agriculture due to the nature of their soil. Loess consists of fine, mineral-rich silt that has been transported and deposited by wind. This soil structure is naturally well-aerated and can retain moisture effectively, providing an ideal medium for plant roots. These characteristics allow farmers to achieve high crop yields in regions like north-central China.

39. (4) Rocky Mountain outwash and northern glacial action
The Great Plains of North America were formed through a combination of geological processes over millions of years. Rivers flowing eastward from the rising Rocky Mountains deposited vast amounts of sediment, known as outwash. Additionally, during the Pleistocene epoch, advancing and retreating continental glaciers further shaped the landscape by depositing till and smoothing the terrain into its current expansive, flat form.

40. (1) Coastal plain
A coastal plain is a flat, low-lying piece of land next to the ocean. It can be formed through the emergence of part of the continental shelf due to a drop in sea level or tectonic uplift. Alternatively, it may result from the deposition of sediments by rivers and marine currents along the shoreline. These plains often feature sandy beaches and salt marshes.

41. (3) They constitute the largest tropical rainforest lowland in the world.
The plains of the Amazon Basin represent the world's most extensive tropical rainforest ecosystem. Located in South America, this vast lowland area is drained by the Amazon River and its numerous tributaries. The region is characterized by high annual precipitation, consistent warm temperatures, and unparalleled biological diversity. It plays a critical role in global carbon cycling and regulating the Earth's climate.

42. (1) A-iii, B-i, C-iv, D-ii
Different geomorphic agents create various types of plains. Alluvial plains result from river deposition, while glacial outwash plains are formed by meltwater from glaciers. Coastal plains are shaped by marine processes and changes in sea level. Loess plains are created by the deposition of fine silt by wind. Understanding these agents helps explain the diverse physical landscapes and soil types found worldwide.

43. (4) Vast, flat, and fertile temperate grasslands
The extensive wheat farming in the North American Great Plains is directly linked to its geography. The region features vast, flat stretches of land that facilitate large-scale mechanized agriculture. The temperate climate and naturally fertile soils, originally covered by grasslands, provide the ideal conditions for growing cereal crops. This combination of topography and soil quality has made the region a global breadbasket.

44. (1) I and II only
The Bhabar belt is a porous region at the foot of the Himalayas, composed of coarse pebbles where many streams disappear underground. These streams re-emerge further south in the swampy Terai region. While the Khadar represents the newer, fertile alluvium deposited by annual floods, the Bhangar consists of older alluvium and lies above the level of the regular flood plains.

45. (3) Terai
The Terai is a marshy and swampy lowland region located immediately south of the Bhabar belt in the Indo-Gangetic plains. It is formed by the re-emergence of underground streams that disappear in the porous Bhabar. Historically, the Terai was covered with thick forests and was rich in wildlife. Today, much of it has been cleared for intensive agriculture due to its fertile soil.

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46. (4) Till Plains - Formed by fine-grained aeolian deposition
Lacustrine plains result from filled-in lakes, while karst plains form from dissolved limestone. Peneplains are created through long-term river erosion. However, till plains are not aeolian; they are formed by the deposition of unsorted glacial drift as a glacier melts. Aeolian plains, such as loess plains, are formed specifically by wind action. This distinction is vital for understanding various geomorphic processes.

47. (1) Wind
The fundamental agent responsible for creating Loess plains is the wind. It picks up fine-grained, mineral-rich silt from desert regions or glacial outwash areas and transports it over long distances. When the wind's velocity decreases, this silt is deposited in thick layers, forming extensive and fertile plains. These landforms are characterized by their lack of horizontal stratification and high porosity.

48. (3) IV only
Glacial plains are formed by the erosional and depositional activities of large ice sheets. A till plain consists of unstratified drift deposited directly by melting ice, while an outwash plain features stratified sediments laid down by glacial meltwater. These landforms are typically found in high-latitude regions or high-altitude areas that experienced glaciation, rather than in the warm equatorial latitudes.

49. (2) Severe moisture deficit with low annual precipitation
A region is primarily classified as a desert based on its aridity rather than temperature. The defining characteristic is a severe moisture deficit, where the potential evaporation significantly exceeds the total annual precipitation, which is usually less than 25 centimeters. While many deserts are hot, some are cold. This lack of water limits vegetation growth and shapes the unique desert landscape.

50. (1) Sahara, Arabian, Gobi, Atacama
Deserts vary greatly in their geographic extent. The Sahara in North Africa is the largest hot desert globally. It is followed by the Arabian Desert on the Arabian Peninsula. The Gobi Desert in Central Asia is the third largest in this group and is classified as a cold desert. The Atacama Desert in South America is significantly smaller but extremely arid.

51. (3) Cold deserts do not experience any form of precipitation, whereas hot deserts receive winter snowfall.
Hot deserts are usually located in subtropical latitudes, while cold deserts are found in higher latitudes or altitudes. The Sahara represents the hot type, and the Gobi is a cold desert. Both environments support specialized xerophytic plants. However, the claim that cold deserts receive no precipitation is false; they often receive moisture as snow. Conversely, hot deserts rarely experience winter snowfall.

52. (4) A-iv, B-i, C-ii, D-iii
Major deserts are distributed across various continents based on global climate patterns. The Sahara is the dominant desert of Africa. The Atacama is located along the western coast of South America. The Gobi spans parts of northern China and southern Mongolia in Asia. The Great Victoria Desert is situated in Australia. Each desert has unique physical features driven by its specific geography and atmospheric conditions.

53. (3) The Humboldt Current and the Andes rain shadow
The extreme aridity of the Atacama Desert is caused by two main factors. First, the cold Humboldt Current flowing along the coast stabilizes the air, preventing cloud formation and rain. Second, the high Andes Mountains act as a massive rain shadow, blocking moisture-laden winds from the east. These combined effects make the Atacama one of the driest places on Earth.

54. (1) I, II, and IV only
The Sahara is the world's largest hot desert, covering much of North Africa in the northern hemisphere. Its terrain is diverse, including sand dunes, rocky plateaus, and gravel plains. The Nile River flows through its eastern portion, providing a vital water source. Because it is located north of the equator, the claim that it lies entirely in the southern hemisphere is incorrect.

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55. (4) Mid-latitude cold desert
The Gobi Desert is categorized as a mid-latitude cold desert. Located in Central Asia, it experiences extreme temperature fluctuations, with very cold winters and hot summers. Its inland position, far from the influence of oceans, and its high elevation contribute to its arid and frigid environment. Unlike subtropical hot deserts, precipitation in the Gobi often occurs in the form of snow.

56. (1) Land degradation in dry areas from climate and humans
Desertification is the process by which relatively fertile land in arid, semi-arid, and dry sub-humid areas becomes increasingly desert-like. This land degradation is typically driven by various factors, including persistent climatic variations like drought and unsustainable human activities. Overgrazing, deforestation, and improper irrigation techniques can deplete soil nutrients and vegetation, leading to the expansion of desert conditions into new areas.

57. (3) Patagonian
The Mojave Desert in North America, the Kalahari Desert in Africa, and the Great Sandy Desert in Australia are all classified as hot deserts, typically located in subtropical zones. In contrast, the Patagonian Desert in South America is a cold desert. Its higher latitude and the rain shadow effect of the Andes Mountains create a cold, arid environment distinct from the others.

58. (1) Both A and R are true and R is the correct explanation of A.
The Arabian Desert is a region of extreme heat and aridity. Its climate is primarily governed by its location within the subtropical high-pressure belt. In this zone, air masses consistently descend from higher altitudes. As the air sinks, it warms and its ability to hold moisture increases, which prevents cloud formation and rainfall. This atmospheric dynamic results in persistent desert conditions.

59. (4) Sodium Nitrate and Copper
Despite its extreme aridity, the Atacama Desert is of great economic importance due to its vast mineral resources. It contains the world's largest natural supply of sodium nitrate, which is historically used for fertilizers and explosives. Additionally, the region is one of the most significant global sources of copper. These mining industries are the primary drivers of the local and national economy.

60. (1) I, II, III, IV
These hot deserts are distributed across the globe from west to east. The Atacama Desert is located in South America. Moving eastward across the Atlantic, the Sahara Desert spans North Africa. Continuing east across the Red Sea, the Arabian Desert occupies the Arabian Peninsula. Finally, the Thar Desert is situated in the Indian subcontinent, completing this longitudinal sequence around the world.

61. (3) Arabian Desert
The Rub' al Khali, which translates to the "Empty Quarter," is the largest continuous sand desert in the world. It forms a major part of the Arabian Desert, covering much of the southern third of the Arabian Peninsula. The region is known for its towering sand dunes and extremely harsh, uninhabited environment. It spans across several countries, including Saudi Arabia, Oman, and Yemen.

62. (4) A-ii, B-iv, C-i, D-iii
Desert landscapes are classified by their surface characteristics. An erg is a vast area of shifting sand dunes. A reg is a stony plain covered with gravel and pebbles. A hamada is a high, rocky desert plateau where most sand has been removed by wind. A wadi is a dry riverbed that may fill with water during rare, heavy rain events.

63. (1) Wind deflation reaching the underground water table
An oasis is a fertile area in a desert where water is available. They are primarily formed through the process of wind deflation. Constant wind erosion can hollow out a depression in the desert floor. When this depression becomes deep enough to reach the underground water table, water seeps to the surface. This allows vegetation to grow and supports human and animal life.

64. (4) I, II, and III
Cold deserts are typically situated in temperate regions at high latitudes or within high-altitude interior continental areas. Due to the low temperatures, precipitation in these regions

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often occurs as snowfall. Prominent global examples include the Gobi Desert in Asia and the Patagonian Desert in South America. These environments have unique ecosystems adapted to both extreme cold and severe moisture deficits.

65. (2) India and Pakistan
The Thar Desert, also known as the Great Indian Desert, is a large arid region in the northwestern part of the Indian subcontinent. It is predominantly located within the states of Rajasthan, Gujarat, and Haryana in India, and the provinces of Sindh and Punjab in Pakistan. It forms a natural boundary between the two nations and is the world's ninth-largest subtropical desert.

66. (1) Erratic rainfall decreasing from east to west
The Thar Desert in Rajasthan is characterized by a highly erratic and low rainfall pattern. The amount of annual precipitation generally decreases as one moves from the eastern edge near the Aravalli Range toward the western border with Pakistan. This gradient occurs because the moisture-laden monsoon winds lose most of their water content before reaching the deep interior of the desert region.

67. (3) Luni
The Luni River is the only significant seasonal river that flows through the arid plains of the Thar Desert in Rajasthan. It originates in the Pushkar valley of the Aravalli Range and flows west-southwest through the desert. The river is ephemeral, carrying water only during the monsoon season, and eventually terminates in the saline marshes of the Rann of Kutch in Gujarat.

68. (2) I, II, and IV only
The Thar Desert is bounded by the Aravalli Range to its east and is notable for having the highest human population density of any desert. The Indira Gandhi Canal has transformed agriculture in its northwestern regions. However, the desert soil is primarily sandy rather than black cotton soil. These features highlight the unique ecological and demographic character of the Great Indian Desert.

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69. (3) Mojave Desert
The Thar Desert, Gobi Desert, and Arabian Desert are all located on the continent of Asia, spanning regions from South Asia to the Far East and the Middle East. Conversely, the Mojave Desert is situated in the southwestern United States in North America. This geographic location makes the Mojave the exception among the listed deserts, which are otherwise all Asian landforms.

70. (2) Parallel orientation to the Arabian Sea monsoon
The Aravalli Range plays a critical role in the aridity of the Thar Desert. Its orientation is almost parallel to the direction of the moisture-bearing South-West monsoon winds coming from the Arabian Sea. Because the mountains do not act as a barrier to these winds, the clouds pass over the region without being forced to rise and cool, resulting in negligible rainfall.

71. (4) Marusthali
In the physiographic classification of Rajasthan, the "Marusthali" refers to the extremely arid western part of the Thar Desert. This region is characterized by vast stretches of shifting sand dunes, very low rainfall, and minimal vegetation. The name itself signifies the "land of death," reflecting the harsh environmental conditions. It is geologically distinct from the semi-arid steppe regions located further east.

72. (1) A-iv, B-i, C-iii, D-ii
The Thar Desert contains several unique geomorphic features. Barchans are crescent-shaped sand dunes with horns pointing downwind. Playas are shallow, temporary salt lakes found in basins. The Rann refers to saline marshy tracts, such as the Rann of Kutch. Dhrians are the locally known shifting sand dunes that move across the desert surface. These terms help describe the desert's complex and dynamic landscape.

73. (3) High human and livestock population density
Unlike the Sahara or the Arabian Desert, which are sparsely populated, the Thar Desert is distinguished by its high human and livestock population density. It is considered the most populous desert in the world. People in this region have developed resilient agricultural and pastoral systems, supported by traditional water

harvesting techniques and modern irrigation projects like the Indira Gandhi Canal, allowing for permanent settlements.

74. (1) I and III only
Fold mountains are formed at convergent plate boundaries, not constructive ones. While the Deccan Plateau is a flood basalt province and the Sahara spans the Tropic of Cancer, the Amazon plain is a fluvial landform created by river deposition, not glacial action. Block mountains are correctly associated with horsts and grabens. Therefore, the statements regarding fold mountain boundaries and Amazonian formation are incorrect.

75. (4) All plains worldwide are formed exclusively by the depositional work of rivers.
Mountains are typically steeper than plateaus, which are elevated flatlands. Deserts can be found across various terrains including plains and mountains. However, it is incorrect to state that all plains are formed by river deposition. Some plains result from glacial outwash, wind-blown loess, marine processes at coasts, or even the long-term erosion of mountains into peneplains.

76. (2) Indira Gandhi Canal - Sources water from the Harike Barrage
The Luni River originates in the Aravallis, not the Himalayas, and Sambhar is a saltwater lake. Barchans are crescent-shaped, not longitudinal dunes. The correct match is the Indira Gandhi Canal, which brings essential water to the Thar Desert from the Harike Barrage, where the Sutlej and Beas rivers meet. This project has significantly boosted irrigation and agriculture in the region.

77. (3) Aeolian transportation and deposition
The formation and continuous shifting of sand dunes in the Thar Desert are the results of aeolian processes. This involves the work of wind as a geological agent. Strong winds transport loose sand particles through suspension and saltation. When the wind loses energy or encounters an obstacle, it deposits the sand, creating various dune shapes that change over time as wind patterns shift.

78. (4) They are crescent-shaped dunes with the horns pointing downwind.
Barchans are a specific type of sand dune commonly found in the Thar Desert. Their primary physical characteristic is a distinct crescent shape. These dunes form in areas where the wind blows consistently from one direction and there is a limited supply of sand. The “horns” or tips of the crescent point in the downwind direction, indicating the path of sand migration.

79. (1) The Alps
Mount Blanc is the highest peak in the Alps, reaching an elevation of 4,807 meters. It is located on the border between France and Italy. As part of a major fold mountain range, it was formed by the tectonic collision of the African and Eurasian plates. The mountain is a significant center for mountaineering and provides important glacial water resources for the region.

80. (2) Potential for renewable energy and mineral wealth
The Thar Desert holds immense economic potential for the state of Rajasthan. Its vast, open landscapes and high solar radiation make it ideal for large-scale solar and wind energy projects. Furthermore, the region is rich in mineral wealth, including significant deposits of limestone, gypsum, and hydrocarbons like oil and natural gas. These resources are vital for industrial growth and state revenue generation.

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CHAPTER 02
Major Rivers and Lakes

1. What defines an antecedent river in the classification of drainage systems?
(1) A river that develops its course along a line of structural weakness
(2) A river that maintains its original course and pattern despite localized tectonic uplift
(3) A river whose direction of flow is strictly determined by the original slope of the land
(4) A river that flows in the opposite direction of the main geological dip
(5) Question not attempted

2. Which of the following is a major left-bank tributary of the Amazon River?
(1) Rio Negro
(2) Madeira River
(3) Purus River
(4) Tapajos River
(5) Question not attempted

3. Identify the incorrect statement regarding the Nile River basin.
(1) The Blue Nile originates from Lake Tana in Ethiopia.
(2) The White Nile and the Blue Nile converge near Khartoum in Sudan.
(3) The Nile River drains directly into the Red Sea.
(4) The basin spans across multiple countries including Uganda, Egypt, and Sudan.
(5) Question not attempted

4. Which of the following major global rivers is famous for crossing the Equator twice during its course?
(1) Amazon River
(2) Nile River
(3) Niger River
(4) Congo River
(5) Question not attempted

5. Match List-I (River) with List-II (Region/Continent) and select the correct answer using the options below:
List-I: (River)
A. Lena
B. Thames
C. Yangtze
D. Mississippi
List-II: (Region/Continent)
i. Europe
ii. North America
iii. Siberia
iv. China
(1) A-i, B-iii, C-ii, D-iv
(2) A-iv, B-i, C-iii, D-ii
(3) A-iii, B-i, C-iv, D-ii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

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6. What is the primary cause of the drastic shrinking of the Aral Sea over the past few decades?
(1) Tectonic activity forming large subterranean drainage fissures
(2) River diversion for large-scale agricultural irrigation
(3) Accelerated evaporation rates caused by global temperature rise
(4) Industrial pollution creating atmospheric barriers to rainfall
(5) Question not attempted

7. Oxbow lakes are a characteristic feature of which specific stage or region of a river's course?
(1) The fast-flowing upper course within steep mountain valleys
(2) The estuarine zone where the river meets the open ocean
(3) The underground karst drainage systems in limestone areas
(4) The lower course where lateral erosion and meandering dominate
(5) Question not attempted

8. Consider the following statements regarding the Yangtze and Huang He rivers:

I. The Yangtze is the longest river in Asia.
II. The Huang He is known as the "Sorrow of China" due to its frequent devastating floods.
III. Both rivers discharge their waters into the Indian Ocean.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

9. The Volga River, which is the longest river in Europe, ultimately drains into which of the following water bodies?
(1) Black Sea
(2) Baltic Sea
(3) Caspian Sea
(4) North Sea
(5) Question not attempted

10. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option:
Assertion (A): Many of the African Great Lakes, such as Lake Tanganyika and Lake Malawi, are exceptionally deep and long.
Reason (R): These lakes were formed by the accumulation of water in the deep trenches created by the East African Rift System.
Choose the correct option:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

11. Which distinctive geographical feature is formed at the mouth of the Mississippi River system?
(1) A deep, navigable estuary
(2) A massive tidal bore
(3) An arcuate delta dominating a high-energy coastline
(4) A classic bird's-foot delta
(5) Question not attempted

12. Consider the following statements regarding the Siberian river systems:
I. The Ob, Yenisei, and Lena all flow predominantly northwards.
II. They discharge their waters into the Arctic Ocean.
III. Their lower reaches freeze in winter, leading to severe spring flooding when the upper reaches thaw.
IV. They are characterized by warm waters supporting tropical biodiversity.
Which of the above statement(s) is/are correct?
(1) I, II, and IV only
(2) II, III, and IV only
(3) I, II, and III only
(4) I, III, and IV only
(5) Question not attempted

13. Identify the odd one out among the following rivers based on their primary geographical continent.
(1) Rhine
(2) Danube
(3) Amazon
(4) Thames
(5) Question not attempted

14. Among the African Great Lakes, which lake holds the distinction of being the second deepest in the world after Lake Baikal?
(1) Lake Victoria
(2) Lake Malawi
(3) Lake Albert
(4) Lake Tanganyika
(5) Question not attempted

15. Match List-I (Type of Lake) with List-II (Example) and select the correct option:
List-I: (Type of Lake)
A. Tectonic Lake
B. Volcanic (Caldera) Lake
C. Glacial Lake
D. Oxbow Lake
List-II: (Example)
i. Crater Lake
ii. Lake Superior
iii. Caspian Sea
iv. Kanwar Lake
(1) A-iii, B-i, C-ii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-iv, D-ii

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(4) A-iii, B-ii, C-iv, D-i
(5) Question not attempted

16. Which of the following countries does NOT share a coastline with the Caspian Sea?
(1) Kazakhstan
(2) Uzbekistan
(3) Russia
(4) Iran
(5) Question not attempted

17. Which of the following pairs of River and its Outfall is correctly matched?
(1) Danube River - Red Sea
(2) Thames River - North Sea
(3) Rhine River - Mediterranean Sea
(4) Lena River - Pacific Ocean
(5) Question not attempted

18. Consider the following statements regarding the Great Lakes of North America:
I. Lake Superior is the largest freshwater lake in the world by surface area.
II. Lake Michigan is located entirely within the United States.
III. Lake Erie is connected to Lake Ontario by the Niagara River.
IV. All five Great Lakes share a direct border with Canada.
V. They were primarily formed by glacial action during the Pleistocene epoch.
Which of the above statement(s) is/are correct?
(1) I, II, III, and IV
(2) I, II, III, and V
(3) II, III, IV, and V
(4) I, III, IV, and V
(5) Question not attempted

19. Read the following statements regarding the classification of rivers and select the correct option:
Statement I: A consequent river initiates its flow according to the general slope of a newly uplifted land surface.
Statement II: A subsequent river generally flows parallel to the regional strike of the underlying rock layers, often developing along zones of weaker rock.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

20. The River Thames, a major river of historical importance in Europe, passes through which globally significant capital city?
(1) Paris
(2) Berlin
(3) Amsterdam
(4) London
(5) Question not attempted

21. Which river in China is characterized by its heavy load of yellow-colored silt sourced from the Loess Plateau?
(1) Yangtze River
(2) Pearl River
(3) Huang He River
(4) Mekong River
(5) Question not attempted

22. Select the correct order of the following major rivers from longest to shortest total length:
(1) Nile, Amazon, Yangtze, Mississippi-Missouri
(2) Amazon, Nile, Mississippi-Missouri, Yangtze
(3) Nile, Yangtze, Amazon, Mississippi-Missouri
(4) Amazon, Yangtze, Nile, Mississippi-Missouri
(5) Question not attempted

23. What geomorphological feature acts as primary evidence that a river like the Brahmaputra is an antecedent drainage system?
(1) Massive depositional floodplains across the coastal plains
(2) Distributaries forming complex deltas at the river mouth
(3) Meandering courses that shift across high plateau regions
(4) Deep gorges cut directly through rising mountain ranges
(5) Question not attempted

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24. What is the main cause of the exceptionally high salinity levels found in the Dead Sea?
(1) High evaporation rates in a hot, arid climate with no outlet to the ocean
(2) Constant influx of concentrated ocean water through underground channels
(3) Heavy industrial discharge from surrounding chemical plants
(4) Dissolution of vast underground salt domes created by recent volcanic activity
(5) Question not attempted

25. Match List-I (Lake) with List-II (Continent) and select the correct option:
List-I: (Lake)
A. Lake Victoria
B. Lake Baikal
C. Lake Erie
D. Lake Titicaca
List-II: (Continent)
i. South America
ii. North America
iii. Africa
iv. Asia
(1) A-ii, B-iv, C-iii, D-i
(2) A-iii, B-i, C-ii, D-iv
(3) A-iii, B-iv, C-ii, D-i
(4) A-iv, B-iii, C-i, D-ii
(5) Question not attempted

26. Identify the incorrect statement regarding the Rhine River.
(1) It flows into the Black Sea forming a large delta.
(2) It originates in the Swiss Alps.
(3) It acts as a natural border between France and Germany for part of its course.
(4) It is one of the most heavily trafficked inland waterways in Europe.
(5) Question not attempted

27. The extensive drainage basin of the Amazon River encompasses a significant portion of South America. Which of the following is NOT a major tributary of the Amazon?
(1) Purus
(2) Madeira
(3) Xingu
(4) Orinoco
(5) Question not attempted

28. Consider the following statements about the Congo River:
I. It possesses the second largest drainage basin in the world by area.
II. It flows extensively through dense equatorial rainforests.
III. It discharges completely into a large inland lake without reaching the ocean.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) III only
(3) I and II only
(4) II and III only
(5) Question not attempted

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29. Identify the odd one out from the following list of lakes based on their water salinity profile.
(1) Caspian Sea
(2) Dead Sea
(3) Lake Superior
(4) Aral Sea
(5) Question not attempted

30. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option:
Assertion (A): The major Siberian rivers (Ob, Yenisei, Lena) frequently cause severe widespread flooding during the spring season.
Reason (R): Their mouths in the Arctic ocean remain frozen longer than their upper reaches in the south, causing massive ice jams that block river flow.
Choose the correct option:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

31. Which of the following highlights the most appropriate economic significance of the Danube River in Europe?
(1) It connects major capitals as a transnational transport route
(2) It provides the continent's largest source of oceanic tidal energy
(3) It supplies irrigation water for large-scale

desert reclamation
(4) It is the sole waterway for ultra-large crude carriers
(5) Question not attempted

32. Consider the following statements about the Caspian Sea:
I. It is technically classified as the world's largest lake by surface area.
II. It is an endorheic basin with no natural outflows to the global ocean.
III. The Volga River is the primary source of its freshwater inflow.
IV. It contains strictly freshwater with zero salinity throughout its volume.
Which of the above statement(s) is/are correct?
(1) I, II, and III only
(2) I, II, and IV only
(3) II, III, and IV only
(4) I, III, and IV only
(5) Question not attempted

33. By total volume of water discharged, which river is recognized as the second largest in the world?
(1) Yangtze River
(2) Congo River
(3) Mississippi River
(4) Yenisei River
(5) Question not attempted

34. What defines a tectonic lake in geographical classification?
(1) A lake formed in depressions caused by crustal faulting
(2) A lake formed by water accumulating in a volcanic crater
(3) A lake formed by glacial scouring during past ice ages
(4) A lake formed by a river cutting off a meandering bend
(5) Question not attempted

35. Match List-I (Siberian River) with List-II (Associated Feature/Region) and select the correct option:
List-I: (Siberian River)
A. Ob
B. Yenisei
C. Lena
D. Volga
List-II: (Associated Feature/Region)
i. Empties into the Laptev Sea
ii. Forms the Gulf of Ob before entering the Kara Sea
iii. Drains into the Caspian Sea
iv. Originates in Mongolia and flows through Central Siberia
(1) A-i, B-ii, C-iii, D-iv
(2) A-iv, B-iii, C-i, D-ii
(3) A-ii, B-iv, C-i, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

36. Which of the following pairs is correctly matched regarding a river and its distinctive geographic feature?
(1) Amazon River - Forms the largest delta in the world, the Sundarbans
(2) Congo River - Crosses the Tropic of Cancer twice
(3) Huang He River - Primary drainage is through dense equatorial rainforest
(4) Mississippi River - Drains into the Gulf of Mexico
(5) Question not attempted

37. Which of the following South American countries does NOT encompass any part of the vast Amazon River drainage basin?
(1) Peru
(2) Colombia
(3) Chile
(4) Bolivia
(5) Question not attempted

38. Consider the following statements regarding the classification of rivers:
I. Antecedent rivers maintain their path despite tectonic uplift.
II. Superimposed rivers develop on a newer surface cover and maintain their course as they erode into underlying older rock structures.
III. Consequent rivers flow in a direction opposite to the initial slope of the land.
IV. Subsequent rivers develop after the consequent river and follow belts of weaker rock.
V. Insequent rivers lack obvious structural or regional geological controls on their path.
Which of the above statement(s) is/are correct?
(1) I, II, IV, and V

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(2) I, III, IV, and V
(3) II, III, IV, and V
(4) I, II, III, and IV
(5) Question not attempted

39. Read the following statements regarding Lake Victoria and select the correct option:
Statement I: Lake Victoria is the largest lake in Africa by surface area.
Statement II: The Equator passes directly through Lake Victoria.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

40. Out of the Great Lakes of North America, which is the only one located entirely within the borders of the United States?
(1) Lake Michigan
(2) Lake Superior
(3) Lake Huron
(4) Lake Erie
(5) Question not attempted

41. Oxbow lakes are most commonly formed as a result of:
(1) Extensive glacial scouring during an ice age
(2) The collapse of a deep volcanic caldera structure
(3) Meandering and subsequent cut-offs in lower courses
(4) Plate subduction at active tectonic boundaries
(5) Question not attempted

42. Arrange the following Great Lakes of North America in order from West to East:
I. Lake Erie
II. Lake Superior
III. Lake Huron
IV. Lake Ontario
Select the correct sequence:
(1) II - III - I - IV
(2) I - II - III - IV
(3) II - I - III - IV
(4) IV - I - III - II
(5) Question not attempted

43. Which of the following statements correctly identifies the nations that border the Aral Sea?
(1) Turkmenistan and Iran
(2) Russia and Kazakhstan
(3) Uzbekistan and Tajikistan
(4) Kazakhstan and Uzbekistan
(5) Question not attempted

44. The Lena River, one of the three great Siberian rivers, primarily flows through which country?
(1) China
(2) Russia
(3) Mongolia
(4) Kazakhstan
(5) Question not attempted

45. Match List-I (African Lake) with List-II (Specific Characteristic) and select the correct option:
List-I: (African Lake)
A. Lake Victoria
B. Lake Tanganyika
C. Lake Malawi
D. Lake Chad
List-II: (Specific Characteristic)
i. Located in a large, shallow endorheic basin bordering the Sahara
ii. Source of the White Nile, not a typical rift valley lake
iii. Southernmost of the East African Rift lakes
iv. Longest freshwater lake in the world, exceptionally deep
(1) A-iv, B-ii, C-i, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-ii, B-iv, C-iii, D-i
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

46. The heavy sediment load of the Huang He (Yellow River) results in which significant geographical consequence?
(1) The formation of the deepest river gorge in Asia
(2) The creation of oxbow lakes along the entire course
(3) A complete cessation of delta growth at the mouth
(4) Frequent flooding caused by rising riverbeds

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(5) Question not attempted

47. Glacial lakes, such as the Great Lakes of North America, are primarily formed by:
(1) Moving ice sheets scouring basins then melting
(2) Emptying magma chambers collapsing into the earth
(3) Tectonic plates pulling apart into rift valleys
(4) Sand dunes migrating and blocking seasonal streams
(5) Question not attempted

48. Consider the following statements about the Mississippi-Missouri river system:
I. It forms the largest drainage basin entirely located within North America.
II. The Missouri River is technically the longest single river within this system.
III. The system flows predominantly westward and empties into the Pacific Ocean.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

49. Identify the incorrect statement regarding the major European rivers.
(1) The Danube flows through more countries than any other river in the world.
(2) The Volga River drains into the Black Sea, making it critical for Mediterranean shipping.
(3) The Thames flows through the capital city of the United Kingdom.
(4) The Rhine River acts as an essential trade route connecting industrial centers to the North Sea.
(5) Question not attempted

50. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option:
Assertion (A): The Amazon River holds the highest discharge volume of any river in the world.
Reason (R): The Amazon drainage basin is located within the equatorial region, which experiences heavy rainfall throughout the year.
Choose the correct option:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

51. Identify the odd one out among the following African lakes based on their association with the Great Rift Valley system.
(1) Lake Tanganyika
(2) Lake Malawi
(3) Lake Victoria
(4) Lake Albert
(5) Question not attempted

52. Consider the following statements about the Dead Sea:
I. It is situated in the Jordan Rift Valley.
II. Its surface and shores are at the lowest land elevation on Earth.
III. It supports a diverse range of marine fish and coral reefs.
IV. Its extreme salinity makes it highly buoyant for swimmers.
Which of the above statement(s) is/are correct?
(1) I, II, and III only
(2) I, II, and IV only
(3) II, III, and IV only
(4) I, III, and IV only
(5) Question not attempted

53. Which of the following pairs of River and Source Region is incorrectly matched?
(1) Yangtze River - Tibetan Plateau
(2) Rhine River - Swiss Alps
(3) Amazon River - Brazilian Highlands
(4) Nile River - Lake Victoria (for the White Nile)
(5) Question not attempted

54. The Danube River is unique because it passes through or touches the borders of four capital cities. Which of the following is NOT one of those capital cities?
(1) Vienna
(2) Prague
(3) Budapest

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(4) Belgrade
(5) Question not attempted

55. Match List-I (European River) with List-II (Body of water it drains into) and select the correct option:
List-I: (European River)
A. Volga
B. Rhine
C. Danube
D. Thames
List-II: (Body of water it drains into)
i. North Sea
ii. Caspian Sea
iii. Black Sea
iv. English Channel (North Sea region)
(1) A-iii, B-iv, C-ii, D-i
(2) A-ii, B-iii, C-i, D-iv
(3) A-i, B-ii, C-iv, D-iii
(4) A-ii, B-i, C-iii, D-iv
(5) Question not attempted

56. Which of the following is NOT classified as a freshwater lake?
(1) Aral Sea
(2) Lake Baikal
(3) Lake Superior
(4) Lake Malawi
(5) Question not attempted

57. The famous Rhine Gorge, through which the Rhine River flows, is primarily geologically classified as a:
(1) Volcanic caldera
(2) Glacial moraine trench
(3) Rift valley bordered by fault blocks
(4) Karst sinkhole network
(5) Question not attempted

58. Consider the following statements regarding global lakes and their features:
I. The Caspian Sea is bounded by five countries.
II. Lake Baikal is considered the deepest freshwater lake globally.
III. Lake Superior holds the largest volume of liquid freshwater in the world.
IV. The Dead Sea is shrinking largely due to water diversion from the Jordan River.
V. African Great Lakes are highly significant to local riparian economies.
Which of the above statement(s) is/are correct?
(1) I, II, IV, and V
(2) I, III, IV, and V
(3) II, III, IV, and V
(4) I, II, III, and V
(5) Question not attempted

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59. Read the following statements regarding the Yangtze River and select the correct option:
Statement I: It is the longest river in the world to flow entirely within a single country.
Statement II: The Three Gorges Dam, one of the world's largest hydroelectric power stations, is built on the Yangtze.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

60. Crater Lake in Oregon, USA, and Lake Toba in Indonesia are prime examples of which type of lake classification?
(1) Oxbow Lakes
(2) Volcanic Lakes
(3) Tectonic Lakes
(4) Glacial Lakes
(5) Question not attempted

61. Which of the following is the most appropriate description of a "subsequent river"?
(1) A river older than the geological structure it cuts
(2) A main river whose course follows the original slope
(3) A tributary eroding along a band of weak rock
(4) A stream that disappears and resurfaces subsequently
(5) Question not attempted

62. Select the correct order of the Great Lakes of North America from largest to smallest based strictly on their surface area:
(1) Superior, Huron, Michigan, Erie, Ontario
(2) Superior, Michigan, Huron, Ontario, Erie

(3) Huron, Superior, Michigan, Erie, Ontario
(4) Superior, Huron, Michigan, Ontario, Erie
(5) Question not attempted

63. Identify the correct statement regarding the Thames River.
(1) It flows through southern England into the North Sea
(2) It originates in the Highlands and flows to the south
(3) It acts as a natural border separating England from Wales
(4) It is known for dramatic tectonic rift valley formations
(5) Question not attempted

64. A drainage pattern where the rivers directly reflect and follow the initial geological slope of a newly formed landscape is classified as:
(1) Antecedent drainage
(2) Consequent drainage
(3) Superimposed drainage
(4) Trellis drainage
(5) Question not attempted

65. Match List-I (River System) with List-II (Associated Nation/Continent) and select the correct option:
List-I: (River System)
A. Ob-Irtysh
B. Mississippi-Missouri
C. Huang He
D. Congo
List-II: (Associated Nation/Continent)
i. North America
ii. Central Africa
iii. China
iv. Russia
(1) A-i, B-iv, C-ii, D-iii
(2) A-iv, B-i, C-iii, D-ii
(3) A-iv, B-ii, C-iii, D-i
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

66. Lake Superior is recognized globally as:
(1) The largest freshwater lake by surface area
(2) The deepest lake in the world
(3) The largest saltwater lake by surface area
(4) The oldest tectonic lake in North America
(5) Question not attempted

67. The Congo River does not possess a true delta at its mouth. What is the primary cause for this geographical phenomenon?
(1) The total absence of sediment load throughout the entire course
(2) The river emptying into an internal basin rather than the ocean
(3) Deep trenches and fast currents carrying sediment to the sea
(4) Artificial dams built near the mouth trapping all approaching silt
(5) Question not attempted

68. Consider the following statements regarding the environmental disaster of the Aral Sea:
I. Before shrinking, it was considered one of the four largest lakes in the world.
II. The retreating water left behind toxic salt and dust plains that cause severe local health issues.
III. The primary cause was intensive water diversion during the Soviet era to grow cotton.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

69. Which of the following pairs concerning the classification of lakes is incorrectly matched?
(1) Tectonic Lake - Lake Tanganyika
(2) Glacial Lake - Lake Huron
(3) Oxbow Lake - Caspian Sea
(4) Volcanic Lake - Crater Lake
(5) Question not attempted

70. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option:
Assertion (A): The Indus and Brahmaputra rivers have carved remarkably deep gorges into the Himalayas.
Reason (R): Both are antecedent rivers that continued to cut downward at a rate matching the tectonic uplift of the Himalayan mountains.
Choose the correct option:
(1) Both A and R are true and R is the correct explanation of A.

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(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

71. Identify the odd one out among the following natural geographical features based on their primary formational processes.
(1) Tectonic Lakes
(2) Glacial Lakes
(3) Volcanic Lakes
(4) Barchan Dunes
(5) Question not attempted

72. Consider the following statements about the Volga River:
I. It originates in the Valdai Hills of Russia.
II. It is the longest river entirely within the European continent.
III. It freezes during the winter over most of its length.
IV. It flows heavily through the industrial heartland of Germany.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) IV only
(3) II and III only
(4) I and IV only
(5) Question not attempted

73. Which feature uniquely highlights the historical importance of the Nile River in antiquity?
(1) It formed an impenetrable barrier shielding it from Asian invaders
(2) It provided a direct route connecting the coast to the interior
(3) Fertile silt from annual floods supported ancient farming
(4) Fast rapids prevented maritime travel, preserving isolated cultures
(5) Question not attempted

74. Arrange the major Siberian rivers from West to East:
I. Yenisei
II. Ob
III. Lena
Select the correct sequence:
(1) I - II - III
(2) II - I - III
(3) III - I - II
(4) II - III - I
(5) Question not attempted

75. Match List-I (Specific River) with List-II (Key Identifying Feature) and select the correct option:
List-I: (Specific River)
A. Mississippi
B. Nile
C. Amazon
D. Huang He
List-II: (Key Identifying Feature)
i. Largest tropical rainforest basin
ii. Bird's foot delta
iii. High loess sediment content
iv. Longest river in the world
(1) A-i, B-ii, C-iv, D-iii
(2) A-iv, B-iii, C-ii, D-i
(3) A-ii, B-i, C-iv, D-iii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

76. Which of the following prominent African lakes is generally NOT considered a physical part of the Great Rift Valley system due to its shallow, saucer-like depression?
(1) Lake Tanganyika
(2) Lake Victoria
(3) Lake Malawi
(4) Lake Albert
(5) Question not attempted

77. Read the following statements regarding the Amazon River basin and select the correct option:
Statement I: The vast equatorial rainforest occupying the Amazon basin is locally referred to as the Selvas.
Statement II: The Amazon basin consistently experiences distinct, prolonged dry seasons causing the river to drastically shrink for half the year.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is

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correct.
(5) Question not attempted

78. Consider the following statements regarding the global distribution of lakes:
I. The majority of the world's large freshwater lakes are situated in high northern latitudes formed by past glaciation.
II. Saltwater lakes are almost exclusively found in hot, arid, endorheic basins where evaporation exceeds precipitation.
III. The Caspian Sea contains the vast majority of the world's saline lake water volume.
IV. Freshwater lakes contain a higher volume of the Earth's total liquid freshwater than all flowing rivers combined.
V. Volcanic crater lakes account for more than half of the total global lake surface area.
Which of the above statement(s) is/are correct?
(1) I, II, III, and IV
(2) I, III, IV, and V
(3) II, III, IV, and V
(4) I, II, IV, and V
(5) Question not attempted

79. The massive, elongated estuary at the mouth of the Ob River, recognized as the world's longest estuary, is known as:
(1) The Gulf of Ob
(2) The Laptev Strait
(3) The Kara Inlet
(4) The Siberian Fjord
(5) Question not attempted

80. Identify the correct statement regarding the ultimate outfall of the Danube River.
(1) It empties into the North Sea facilitating massive maritime trade
(2) It forms a delta and empties into the Black Sea
(3) It discharges into the Mediterranean Sea via the Italian peninsula
(4) It drains into the Caspian Sea alongside the Volga River
(5) Question not attempted

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ANSWERS

1. (2) A river that maintains its original course and pattern despite localized tectonic uplift
Antecedent rivers predate the geological structures they traverse. As the land undergoes tectonic uplift or mountain-building processes, these rivers possess sufficient erosive power to maintain their original path. By cutting deep gorges through rising terrain, they preserve their historical course, remaining independent of the newly formed topography. This contrasts with consequent rivers that follow modern slopes.

2. (1) Rio Negro
The Amazon River system features numerous significant tributaries classified by their bank position. The Rio Negro is the largest left-bank tributary, originating in Colombia and joining the Amazon near Manaus. Other major rivers like the Madeira, Purus, and Tapajos are right-bank tributaries, flowing from the south. The Rio Negro is known for its distinctive dark-colored waters.

3. (3) The Nile River drains directly into the Red Sea.
The Nile River system is primarily formed by the convergence of the White Nile and the Blue Nile at Khartoum. The Blue Nile originates from Lake Tana in the Ethiopian Highlands. This massive drainage basin spans several nations, including Egypt and Sudan. Ultimately, the river flows northward and discharges its waters into the Mediterranean Sea, not the Red Sea.

4. (4) Congo River
The Congo River, formerly known as the Zaire River, is the only major river on Earth that crosses the Equator twice during its journey. It flows through the dense equatorial rainforests of Central Africa. This unique geographical path results in a relatively consistent water volume throughout the year, as different parts of the basin experience seasonal rains at different times.

5. (3) A-iii, B-i, C-iv, D-ii
Major global river systems are distributed across different continents according to regional geography. The Lena River flows through the Siberian region of Russia. The Thames is a vital waterway located in Europe, specifically the United Kingdom. The Yangtze is the longest river in Asia, situated in China. The Mississippi River serves as a primary drainage system within North America.

6. (2) River diversion for large-scale agricultural irrigation
The drastic shrinking of the Aral Sea is primarily attributed to large-scale human intervention. Starting in the mid-twentieth century, the two main feeder rivers, the Amu Darya and Syr Darya, were diverted for massive agricultural irrigation projects, particularly cotton farming. This reduction in freshwater inflow, combined with high evaporation in the arid climate, caused the lake to dry up rapidly.

7. (4) The lower course where lateral erosion and meandering dominate
Oxbow lakes are distinctive U-shaped bodies of water formed when a wide meander from the main course of a river is cut off. This process typically occurs in the lower course or old stage of a river, where the gradient is low and lateral erosion is dominant. Over time, the river breaches the narrow neck of a meander loop.

8. (1) I and II only
The Yangtze River holds the record as the longest river in Asia and flows entirely within China. The Huang He, or Yellow River, is often called the “Sorrow of China” due to its history of catastrophic floods. Both rivers eventually discharge into the Pacific Ocean via the East China Sea and Bohai Sea respectively, rather than the Indian Ocean.

9. (3) Caspian Sea
The Volga River is recognized as the longest river in Europe and flows entirely through Russia. It is a vital waterway for transportation and irrigation within the country. After traversing a significant portion of European Russia, it ultimately drains

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into the Caspian Sea, which is an endorheic basin with no outlet to the world's oceans.

10. (1) Both A and R are true and R is the correct explanation of A.
Several major African lakes, including Lake Tanganyika and Lake Malawi, are characterized by their extreme depth and elongated shapes. These physical features are a direct result of their geological origin within the East African Rift System. As the continental crust pulls apart, deep tectonic trenches are created, which then fill with water to form these significant rift valley lakes.

11. (4) A classic bird's-foot delta
The Mississippi River is well-known for its unique depositional feature at its mouth in the Gulf of Mexico. This structure is classified as a bird's-foot delta, characterized by long, narrow distributary channels that extend into the sea like the digits of a bird's foot. This shape results from the heavy sediment load being deposited into relatively calm waters.

12. (3) I, II, and III only
The major Siberian rivers, including the Ob, Yenisei, and Lena, primarily flow in a northward direction. These systems discharge their waters into the Arctic Ocean. A significant geographical challenge occurs during spring when the upper southern reaches thaw while the lower northern reaches remain frozen. This blockage leads to severe ice-jam flooding across the vast Siberian plains.

13. (3) Amazon
Geographical classification of river systems often groups them by the continent where they are located. The Rhine, Danube, and Thames are all major rivers situated within the European continent. In contrast, the Amazon River is located in South America. Therefore, the Amazon is the exception in this list, which primarily consists of significant European waterways used for trade.

14. (4) Lake Tanganyika
Lake Tanganyika is a major African Great Lake located within the East African Rift. It holds several global records, including being the longest freshwater lake in the world. Geologically, it is the second deepest lake globally, surpassed only by Lake Baikal in Siberia. Its great depth is a result of the tectonic forces that created the rift valley.

15. (1) A-iii, B-i, C-ii, D-iv
Lakes are classified based on their formation processes. Tectonic lakes, like the Caspian Sea, originate from crustal movements. Volcanic lakes, such as Crater Lake, form in calderas. Glacial lakes, including Lake Superior, result from ice sheet scouring. Oxbow lakes, like Kanwar Lake, are formed by river meandering. These diverse origins dictate the shape, depth, and chemistry of global lakes.

16. (2) Uzbekistan
The Caspian Sea is the world's largest inland body of water and is bordered by five specific countries. These nations include Russia to the northwest, Kazakhstan to the northeast, Turkmenistan to the southeast, Iran to the south, and Azerbaijan to the southwest. Uzbekistan, while located in Central Asia, is landlocked and does not share a coastline with the Caspian Sea.

17. (2) Thames River - North Sea
Correct identification of river outfalls is essential in physical geography. The Danube River drains into the Black Sea, not the Red Sea. The Rhine River flows into the North Sea, while the Lena River empties into the Arctic Ocean. The Thames River, which flows through London, correctly discharges its waters into the North Sea via the Thames Estuary.

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18. (2) I, II, III, and V
The North American Great Lakes are massive freshwater bodies formed primarily by glacial action during the Pleistocene epoch. Lake Superior is the largest by surface area globally. Lake Michigan is the only one situated entirely within the United States. While most share a border with Canada, Michigan does not. Lake Erie connects to Lake Ontario through the Niagara River.

19. (1) Both Statement I and Statement II are correct.
River classification is based on the relationship between flow and geological structure. A consequent river develops its course by following the initial slope of a newly formed land surface. A subsequent river is a tributary that develops later, typically flowing along the strike of the

underlying rock strata or following zones of weaker rock that are easily eroded by water.

20. (4) London
The River Thames is the most famous waterway in the United Kingdom and plays a central role in the nation's geography and history. It flows through southern England and passes directly through the capital city, London. The river is tidal in its lower reaches and has historically served as a critical route for international trade and domestic transport.

21. (3) Huang He River
The Huang He, commonly known as the Yellow River, is distinguished by the high volume of yellow-colored silt it carries. This sediment originates from the Loess Plateau, which is composed of fine, wind-blown soil. As the river flows through this region, it erodes the loose material, giving the water its characteristic hue and leading to frequent downstream flooding.

22. (1) Nile, Amazon, Yangtze, Mississippi-Missouri
Measuring river length involves calculating the distance from the source to the mouth. The Nile is generally recognized as the longest river in the world, followed closely by the Amazon. The Yangtze River in China is the third longest, while the Mississippi-Missouri system in North America ranks fourth. These massive systems are vital for the continents they serve.

23. (4) Deep gorges cut directly through rising mountain ranges
Antecedent drainage occurs when a river maintains its course while the land beneath it undergoes tectonic uplift. In the case of the Brahmaputra, the primary evidence for this classification is the presence of incredibly deep gorges. These narrow valleys are formed as the river aggressively erodes downward through the Himalayan mountain range at a rate equal to the uplift.

24. (1) High evaporation rates in a hot, arid climate with no outlet to the ocean
The extreme salinity of the Dead Sea is a result of its unique geographical and climatic setting. Situated in a hot, arid environment, the lake experiences exceptionally high rates of evaporation. Because it is an endorheic basin with no outlet, dissolved minerals and salts brought in by the Jordan River accumulate and concentrate over thousands of years.

25. (3) A-iii, B-iv, C-ii, D-i
Global lakes are distributed across various continents, each possessing unique characteristics. Lake Victoria is located in Africa and is the continent's largest. Lake Baikal, the world's deepest lake, is situated in Asia. Lake Erie is one of the Great Lakes of North America. Lake Titicaca, the highest navigable lake, is located in the Andes of South America.

26. (1) It flows into the Black Sea forming a large delta.
The Rhine River is a critical European waterway that originates in the Swiss Alps and serves as a major industrial transport route. It forms part of the border between France and Germany. However, the river does not flow into the Black Sea; instead, it travels northward through Germany and the Netherlands to discharge into the North Sea.

27. (4) Orinoco
The Amazon River possesses a massive drainage basin with hundreds of significant tributaries. Major rivers such as the Purus, Madeira, and Xingu all flow into the Amazon from different directions. The Orinoco River, however, is a separate and distinct river system located primarily in Venezuela and Colombia, draining into the Atlantic Ocean independently of the Amazon.

28. (2) III only
The Congo River is a major African waterway with the world's second-largest drainage basin. It is characterized by its course through extensive equatorial rainforests. Contrary to some inland systems, the Congo River does not discharge into a lake; it flows all the way to the western coast of the continent and empties directly into the Atlantic Ocean.

29. (3) Lake Superior
Lakes can be broadly categorized as freshwater or saline based on their mineral content. The Caspian Sea, the Dead Sea, and the Aral Sea are all known for their significant salinity levels, often existing in endorheic basins. Lake Superior,

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one of the North American Great Lakes, is a freshwater body. Thus, it is the exception among these saline examples.

30. (1) Both A and R are true and R is the correct explanation of A.
The major rivers of Siberia, such as the Ob and Yenisei, experience severe flooding during the spring thaw. This phenomenon occurs because the rivers flow from warmer southern regions toward the frozen Arctic in the north. The southern reaches melt first, but the downstream northern sections remain blocked by ice, creating massive jams that force water over the banks.

31. (1) It connects major capitals as a transnational transport route
The Danube River is of immense economic importance due to its role as a transnational transportation corridor. It flows through ten countries and serves as a vital link between Central and Eastern Europe. By connecting several major capital cities and industrial regions, it facilitates large-scale trade, navigation, and regional integration, making it one of the world's most significant international waterways.

32. (1) I, II, and III only
The Caspian Sea is the largest inland body of water on Earth and is technically classified as a lake. It occupies an endorheic basin, meaning it has no natural outflows. The Volga River provides the majority of its freshwater inflow. Despite this inflow, the sea is not strictly freshwater; it contains significant salinity, making it a brackish environment.

33. (2) Congo River
When measuring rivers by the total volume of water they discharge into the ocean, the Amazon River ranks first globally. The Congo River, located in Central Africa, holds the position of the second-largest river by discharge. This high volume is primarily due to the heavy year-round rainfall characteristic of the equatorial regions through which the river flows.

34. (1) A lake formed in depressions caused by crustal faulting
Tectonic lakes are formed through the movement of the Earth's crust. When tectonic plates shift, they can create significant depressions or basins through faulting, folding, or subsidence. These low-lying areas eventually fill with water from precipitation or rivers. Examples include the East African Rift lakes and Lake Baikal, which are characterized by their great depth and elongated shapes.

35. (3) A-ii, B-iv, C-i, D-iii
Siberian and Russian rivers are defined by their specific drainage basins. The Ob River forms the extensive Gulf of Ob before entering the Kara Sea. The Yenisei originates in Mongolia and flows through Central Siberia. The Lena River empties into the Laptev Sea in the far north. The Volga, though in European Russia, flows south into the Caspian Sea.

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36. (4) Mississippi River - Drains into the Gulf of Mexico
Geographical features often define major river systems. The Amazon River drains into the Atlantic Ocean, while the Sundarbans delta is associated with the Ganges-Brahmaputra. The Congo River crosses the Equator, not the Tropic of Cancer. The Huang He flows through arid and semi-arid regions. Correctly, the Mississippi River system discharges its waters into the Gulf of Mexico in North America.

37. (3) Chile
The Amazon drainage basin is the largest in the world, covering a vast area of South America. It includes territories in Brazil, Peru, Colombia, Bolivia, and several other nations. Chile, however, is located on the western side of the Andes Mountains. Because the mountains act as a drainage divide, all Chilean rivers flow westward into the Pacific Ocean.

38. (1) I, II, IV, and V
Drainage systems are classified by their relationship to geological structures. Antecedent and superimposed rivers maintain their paths despite surface changes. Subsequent rivers follow zones of weakness, while insequent rivers show no structural control. Consequent rivers are defined by their alignment with the original slope of the land, rather than flowing in the opposite direction of the initial topographic gradient.

39. (1) Both Statement I and Statement II are correct.
Lake Victoria is a significant geographical feature located in East Africa. It is the largest lake on the African continent by surface area and the world's largest tropical lake. Furthermore, the Equator passes directly through the northern portion of the lake. It serves as the primary reservoir for the White Nile, supporting millions of people in the region.

40. (1) Lake Michigan
The Great Lakes of North America consist of five interconnected freshwater bodies. While four of these lakes—Superior, Huron, Erie, and Ontario—serve as a natural border between the United States and Canada, Lake Michigan is unique. It is the only Great Lake situated entirely within the territorial boundaries of the United States, surrounded by several Midwestern states.

41. (3) Meandering and subsequent cut-offs in lower courses
Oxbow lakes are a classic feature of fluvial geomorphology. They form in the mature or old stages of a river's development when high-energy meanders become increasingly pronounced. Eventually, the river erodes through the narrow neck of the meander, creating a straighter channel. The abandoned loop is then isolated by sediment deposition, resulting in a crescent-shaped oxbow lake.

42. (1) II - III - I - IV
The Great Lakes are arranged across the interior of North America in a specific longitudinal sequence. Moving from west to east, the order begins with Lake Superior, the largest and westernmost. It is followed by Lake Michigan and Lake Huron. Further east are Lake Erie and finally Lake Ontario, which connects to the Atlantic Ocean via the St. Lawrence.

43. (4) Kazakhstan and Uzbekistan
The Aral Sea is located in Central Asia and was once one of the largest lakes in the world. Its geographic position is defined by the borders of two specific countries: Kazakhstan to the north and Uzbekistan to the south. The dramatic reduction of the lake's surface area over recent decades has affected the environment and economies of both nations.

44. (2) Russia
The Lena River is one of the three great Siberian rivers that flow into the Arctic Ocean. It is located entirely within the borders of Russia, originating in the Baikal Mountains and traversing the vast territory of eastern Siberia. The river is notable for its massive delta and its role as a vital transportation artery during the summer months.

45. (3) A-ii, B-iv, C-iii, D-i
African lakes possess distinct physical and geological characteristics. Lake Victoria is a shallow basin serving as the source of the White Nile. Lake Tanganyika is exceptionally deep and holds the record for the world's longest freshwater lake. Lake Malawi is the southernmost of the rift lakes. Lake Chad is a shallow, endorheic body of water situated near the Sahara.

46. (4) Frequent flooding caused by rising riverbeds
The Huang He carries an immense volume of sediment, leading to significant geological and human impacts. As the river reaches the low-lying North China Plain, the flow velocity decreases, causing the silt to settle and accumulate. This process steadily raises the riverbed above the surrounding land, necessitating high levees and often resulting in catastrophic breach-induced flooding.

47. (1) Moving ice sheets scouring basins then melting
Glacial lakes are formed through the powerful erosive action of massive ice sheets. During glacial periods, moving ice scours the land surface, creating deep depressions and hollows in the bedrock. When the glaciers eventually retreat and melt due to climatic warming, these basins fill with meltwater, forming large freshwater bodies like the Great Lakes of North America.

48. (1) I and II only
The Mississippi-Missouri river system is the primary drainage network for North America. While the Mississippi is the main stem, the Missouri River is technically the longer tributary within the combined system. This massive network collects water from a vast interior basin. It flows predominantly in a southward direction before discharging its waters into the Gulf of Mexico.

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49. (2) The Volga River drains into the Black Sea, making it critical for Mediterranean shipping.
Major European rivers are essential for international trade and connectivity. The Danube is notable for flowing through or bordering numerous countries. The Thames is the iconic river of London. The Rhine serves as a vital industrial artery. However, the Volga River, the longest in Europe, does not drain into the Black Sea; it empties into the landlocked Caspian Sea.

50. (1) Both A and R are true and R is the correct explanation of A.
The Amazon River is unparalleled in terms of its total discharge volume, carrying more water than the next several largest rivers combined. This immense flow is directly explained by its geographical location. The river's vast drainage basin lies within the equatorial belt, a region characterized by consistent, heavy precipitation throughout the year, ensuring a massive and continuous supply of water.

51. (3) Lake Victoria
Many of the Great Lakes in Africa are located within the deep, narrow trenches of the East African Rift Valley, such as Lake Tanganyika and Lake Malawi. These lakes are typically very deep and steep-sided. Lake Victoria, however, is a relatively shallow, saucer-shaped depression situated between the eastern and western branches of the rift, rather than inside a rift trench.

52. (2) I, II, and IV only
The Dead Sea is a unique hypersaline lake located in the Jordan Rift Valley. It sits at the lowest land elevation on Earth. Due to its extreme salinity, the water is exceptionally dense, allowing people to float effortlessly on its surface. However, this high salt concentration makes the environment inhospitable for most forms of marine life, including fish and corals.

53. (3) Amazon River - Brazilian Highlands
Most major rivers are defined by their high-altitude source regions. The Yangtze originates in the Tibetan Plateau, while the Rhine begins in the Swiss Alps. The White Nile's primary source is Lake Victoria. In contrast, the Amazon River originates in the Andes Mountains of Peru, not the Brazilian Highlands, which are located further to the east of its headwaters.

54. (2) Prague
The Danube River is unique for its transnational path, passing through ten different countries. Along its course, it flows through or forms the border of four national capital cities: Vienna, Bratislava, Budapest, and Belgrade. Prague, while a significant Central European capital, is located in the Czech Republic and sits on the Vltava River, which belongs to the Elbe basin.

55. (4) A-ii, B-i, C-iii, D-iv
European rivers are categorized by the seas into which they discharge. The Volga flows south into the Caspian Sea. The Rhine travels north to the North Sea. The Danube flows east across the continent to the Black Sea. The Thames flows through London and empties into the North Sea region via its large estuary, often associated with the eastern English Channel entrance.

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56. (1) Aral Sea
Lakes are primarily distinguished by their chemical composition. Lake Baikal, Lake Superior, and Lake Malawi are among the largest freshwater reservoirs in the world. The Aral Sea, however, is a saline body of water. Over the last several decades, as its water volume has decreased due to river diversion, its salt concentration has increased significantly, making it extremely saline.

57. (3) Rift valley bordered by fault blocks
The Rhine Gorge is a significant geological feature located along the Middle Rhine in Germany. This dramatic landscape was formed by the river cutting through the Rhenish Massif. Geologically, it is associated with a rift valley system where the Earth's crust has been pulled apart, creating a graben structure bordered by uplifted fault blocks that the river has since incised.

58. (1) I, II, IV, and V
Global lake systems provide vital resources and geographic benchmarks. The Caspian Sea is bordered by five nations and Lake Baikal is the world's deepest. While Lake Superior is the largest freshwater lake by surface area, Lake Baikal contains the largest volume of liquid freshwater.

The Dead Sea continues to shrink, while African lakes remain significant to regional economies.

59. (1) Both Statement I and Statement II are correct.
The Yangtze River is the longest river in Asia and holds the distinction of being the longest river in the world to flow entirely within a single country, China. It is a major center for economic activity and energy production. The Three Gorges Dam, located on the Yangtze, is the world's largest power station in terms of installed hydroelectric capacity.

60. (2) Volcanic Lakes
Lakes can be classified by their formational origins. Crater Lake in the United States and Lake Toba in Indonesia are classic examples of volcanic lakes. These bodies of water form in the large, circular depressions called calderas, which are created when a volcano's magma chamber empties and the summit collapses. Over time, these deep basins fill with rainwater and snowmelt.

61. (3) A tributary eroding along a band of weak rock
In the study of drainage patterns, a subsequent river is defined as a tributary stream that develops after the establishment of the original consequent drainage. Its course is primarily determined by the underlying geology, as it selectively erodes along belts of softer or weaker rock. This results in a valley that typically follows the strike of the rock strata.

62. (1) Superior, Huron, Michigan, Erie, Ontario
The North American Great Lakes vary significantly in size. When ranked by surface area from largest to smallest, the sequence begins with Lake Superior, followed by Lake Huron and Lake Michigan. Lake Erie is the second smallest, and Lake Ontario is the smallest of the five. Together, these interconnected lakes constitute the largest group of freshwater lakes on Earth.

63. (1) It flows through southern England into the North Sea
The Thames River is the primary waterway of southern England. It originates in the Cotswold Hills and flows eastward through major towns and the capital city, London. Eventually, the river broadens into the Thames Estuary and discharges its waters into the North Sea. It is a vital historical and modern route for navigation and urban development within the region.

64. (2) Consequent drainage
Drainage patterns are classified according to how they relate to the landscape's topography and geological structure. A system where the rivers flow in direct response to the initial slope and tilt of a newly formed land surface is known as consequent drainage. This is often seen on coastal plains or newly uplifted mountain slopes where the water follows the simplest path.

65. (2) A-iv, B-i, C-iii, D-ii
Major river systems are globally distributed across different continents. The Ob-Irtysh system is a major drainage network in Russia. The Mississippi-Missouri system covers a vast area of North America. The Huang He is a critical river in China. The Congo River flows through the heart of Central Africa. These systems are essential for the water security of their respective regions.

66. (1) The largest freshwater lake by surface area
Lake Superior, located on the border between the United States and Canada, holds a prominent place in global geography. It is officially recognized as the world's largest freshwater lake when measured by surface area. Its vast size influences regional weather patterns, including lake-effect snow, and it serves as a critical component of the Great Lakes-St. Lawrence Seaway system.

67. (3) Deep trenches and fast currents carrying sediment to the sea
Unlike many major rivers, the Congo River does not form a traditional delta at its mouth. This is primarily because of the unique underwater topography and powerful currents at its discharge point into the Atlantic Ocean. A deep submarine canyon extends from the river's mouth, allowing sediment to be carried far out into the deep sea rather than accumulating near the shore.

68. (4) I, II, and III
The Aral Sea once ranked among the four largest lakes globally, but it has undergone a catastrophic decline. The primary cause was the massive diversion of its feeder rivers for cotton irrigation. As the water receded, it exposed vast plains of toxic salt and dust, which are blown

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across the region by winds, causing severe local health problems.

69. (3) Oxbow Lake - Caspian Sea
Lakes are classified by their mode of origin. Lake Tanganyika is a tectonic rift lake, while Lake Huron was formed by glacial processes. Crater Lake is a classic volcanic caldera lake. However, the Caspian Sea is not an oxbow lake; it is a massive tectonic basin and a remnant of the ancient Paratethys Sea, far exceeding the scale of oxbows.

70. (1) Both A and R are true and R is the correct explanation of A.
The Indus and Brahmaputra rivers are famous for the deep, spectacular gorges they have carved through the Himalayan mountains. These rivers are classified as antecedent drainage systems because they existed before the mountains were formed. As the Himalayas rose due to tectonic forces, the rivers maintained their courses by eroding downward at a rate that matched the mountain-building process.

71. (4) Barchan Dunes
Natural landforms are categorized based on the geological or environmental processes that create them. Tectonic, glacial, and volcanic lakes are all types of water bodies formed by different internal or external Earth processes. Barchan dunes, however, are crescent-shaped sand dunes formed by wind action in desert environments. Therefore, they are aeolian features and distinct from the various lake classifications.

72. (2) IV only
The Volga is a legendary river that originates in the Valdai Hills and is the longest river in Europe. It flows entirely within Russia and is a central part of the nation's identity and economy. While it does freeze during the winter months, it does not flow through Germany; it traverses the Russian heartland before emptying into the Caspian Sea.

73. (3) Fertile silt from annual floods supported ancient farming
The historical significance of the Nile River is deeply tied to the development of ancient Egyptian civilization. Each year, the river would overflow its banks, depositing a layer of rich, fertile silt across the surrounding floodplains. This natural irrigation and fertilization cycle allowed for productive agriculture in an otherwise arid region, providing the economic foundation for one of history's greatest empires.

74. (2) II - I - III
The three great rivers of Siberia are distributed across the vast northern territory of Russia. When moving from west to east, the sequence begins with the Ob River, followed by the Yenisei River in the central region. The Lena River is the easternmost of the three. All three rivers flow predominantly northward to discharge their waters into the Arctic Ocean.

75. (4) A-ii, B-iv, C-i, D-iii
Major rivers are often identified by unique geographical or ecological traits. The Mississippi River is characterized by its bird's-foot delta. The Nile is globally recognized as the longest river. The Amazon River basin contains the world's largest tropical rainforest, known for its biodiversity. The Huang He, or Yellow River, is famous for the high loess sediment content that colors its waters.

76. (2) Lake Victoria
While many African Great Lakes are situated directly within the deep, narrow trenches of the East African Rift Valley, Lake Victoria has a different origin. It occupies a wide, shallow, and saucer-shaped tectonic depression located between the Eastern and Western Rift branches. Because of this, it lacks the extreme depth and steep walls characteristic of true rift valley lakes.

77. (3) Statement I is correct, but Statement II is incorrect.
The Amazon River basin is dominated by the world's largest tropical rainforest, which is locally known as the Selvas. This region is located along the Equator and is characterized by high temperatures and significant rainfall throughout the year. Contrary to having a prolonged dry season, the basin experiences high precipitation consistently, maintaining the river's massive flow and the forest's lush density.

78. (1) I, II, III, and IV
The distribution of global lakes is shaped by climate and geological history. Most large lakes are

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found in northern latitudes due to past glaciation. Saltwater lakes typically occur in arid, endorheic basins. The Caspian Sea holds a massive share of the world's saline water. While freshwater lakes hold significant volumes, volcanic crater lakes comprise only a small fraction of total area.

79. (1) The Gulf of Ob
The Ob River in Russia is notable for its unique outfall into the Arctic Ocean. It forms the Gulf of Ob, which is recognized as the longest estuary in the world. This massive, elongated body of water serves as a transition zone between the freshwater of the river and the saline water of the Kara Sea, stretching for several hundred miles.

80. (2) It forms a delta and empties into the Black Sea
The Danube River is the second-longest river in Europe and serves as a major artery for the continent. It originates in the Black Forest of Germany and flows eastward through Central and Eastern Europe. Upon reaching the coast of Romania and Ukraine, the river forms an extensive delta before ultimately discharging its waters into the Black Sea.

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CHAPTER 03
Natural Vegetation and Biomes

1. Which of the following provides the most accurate definition of a biome?
(1) A specific geographic area characterized by its distinct physical environment and the specialized genetic traits of all resident species
(2) A major biotic community of regional flora and fauna primarily categorized by its dominant climate
(3) A transitional zone between two distinct biological communities where various species intermingle and compete for limited resources
(4) An artificial ecosystem created for the conservation of endangered plants and animal species through managed human intervention
(5) Question not attempted

2. Match List I (Temperate Grassland) with List II (Region) and select the correct answer using the codes given below.
List I: (Temperate Grassland)
A. Prairies
B. Pampas
C. Veld
D. Downs
List II: (Region)
i. South Africa
ii. Australia
iii. North America
iv. South America
Options:
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-ii, C-iv, D-i
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

3. The Amazon Basin is characterized by a dense, broad-leaved evergreen forest. What is the local name given to this specific type of tropical rainforest?
(1) Campos
(2) Llanos
(3) Selvas
(4) Gran Chaco
(5) Question not attempted

4. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Despite supporting the most abundant biomass, tropical rainforests possess highly acidic and nutrient-poor soils.
Reason (R): Heavy continuous rainfall leaches soluble nutrients deep into the soil, while the rapid bacterial action quickly decomposes any organic matter on the surface.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

5. Consider the following statements regarding the layered structure of tropical rainforests:
I. The emergent layer consists of the tallest trees that rise above the general canopy and receive maximum sunlight.
II. The understory layer is densely packed with vegetation because it receives an abundance of direct sunlight.
III. The forest floor is generally dark, receiving less than two percent of sunlight, limiting plant growth mainly to fungi and decaying matter.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

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6. Plants in the desert biome exhibit various xerophytic adaptations to survive arid conditions. Which of the following is not a recognized adaptation of desert vegetation?
(1) Development of deep taproots to reach groundwater tables
(2) Presence of broad, thin leaves to maximize transpiration cooling
(3) Waxy coatings on leaves and stems to prevent water loss
(4) Stems that are succulent and capable of storing large amounts of water
(5) Question not attempted

7. Which of the following statements correctly describes the tropical deciduous (monsoon) forests?
(1) They experience a year-round constant shedding of leaves, ensuring the forest never appears bare
(2) These forests are found exclusively in regions receiving less than 50 cm of annual rainfall
(3) They exhibit a more complex layered structure and higher biodiversity than tropical rainforests
(4) Trees in these forests shed their leaves simultaneously during the dry season to conserve water
(5) Question not attempted

8. Arrange the following natural biomes in the correct sequential order as one moves from the Equator towards the North Pole.
A. Tundra
B. Tropical Rainforest
C. Boreal Forest (Taiga)
D. Tropical Savanna
Which of the following represents the correct sequential order?
(1) B, D, C, A
(2) B, C, D, A
(3) D, B, C, A
(4) B, D, A, C
(5) Question not attempted

9. Mediterranean vegetation is characterized by shrubs and drought-resistant plants. Which of the following regions does not experience a Mediterranean climate and its associated vegetation?
(1) Central Chile
(2) Southwestern Australia
(3) Southeastern United States
(4) California coast
(5) Question not attempted

10. In temperate deciduous forests, trees shed their leaves in autumn. What is the primary ecological trigger and purpose for this phenomenon?
(1) Seasonal changes in temperature and daylight that trigger dormancy to prevent winter moisture loss
(2) The onset of monsoon rains which causes leaf rot, prompting trees to shed to prevent fungal infection
(3) High summer temperatures which scorch the canopy, forcing trees to drop leaves to survive the heat
(4) Soil nutrient depletion at the end of summer which makes it physically impossible to sustain foliage
(5) Question not attempted

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11. Consider the following statements regarding Mangrove forests:
I. They are found in tropical and subtropical intertidal regions.
II. They exhibit vivipary, where seeds germinate while still attached to the parent tree.
III. They possess pneumatophores which help them absorb oxygen directly from the air.
IV. They thrive exclusively in highly acidic freshwater lakes.
Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) II, III and IV
(3) I, II and III
(4) I, III and IV
(5) Question not attempted

12. Temperate rainforests are found in limited coastal areas with high precipitation. Which of the following tree species is highly characteristic of the temperate rainforests of New Zealand?
(1) Douglas Fir
(2) Silver Fern and Kauri
(3) Coastal Redwood
(4) Sitka Spruce
(5) Question not attempted

13. Match List I (Biome) with List II (Dominant Tree Species) and select the correct answer using the codes given below.
List I: (Biome)
A. Tropical Deciduous
B. Tropical Rainforest
C. Boreal Forest
D. Mediterranean
List II: (Dominant Tree Species)
i. Pine and Spruce
ii. Teak and Sal
iii. Cork Oak and Olive
iv. Mahogany and Rosewood
Options:
(1) A-ii, B-iv, C-i, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-iv, B-ii, C-i, D-iii
(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

14. The following question consists of two statements—Statement I and Statement II. Answer the question by selecting the appropriate option.
Statement I: The Tundra biome is entirely devoid of deep-rooted trees due to the presence of permafrost beneath the soil surface.
Statement II: Alpine Tundra is found at high altitudes on mountains across various latitudes, whereas Arctic Tundra is restricted to high northern latitudes.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

15. Consider the following statements regarding the ideal conditions for the growth of Coral Reefs:
I. The water temperature should ideally be between 20 degrees Celsius and 27 degrees Celsius.
II. They require clear, shallow water to allow sunlight penetration for photosynthesis.
III. They thrive best in completely fresh water with zero salinity.
IV. They require a hard substrate for the coral polyps to attach and build reefs.
V. They flourish in areas with heavy sedimentation and muddy waters.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and V only
(3) I, II and IV only
(4) IV and V only
(5) Question not attempted

16. In which of the following biomes is the soil formation process known as 'podzolization' most predominantly observed, resulting in acidic, ash-grey soils?
(1) Tropical Rainforest
(2) Boreal Forest (Taiga)
(3) Tropical Savanna
(4) Mediterranean
(5) Question not attempted

17. Which of the following pairs of Biome and its corresponding climatic characteristic is correctly matched?
(1) Tropical Savanna : Regions with winter rain and completely dry summer periods
(2) Tropical Rainforest : Consistent high heat and rainfall throughout the year
(3) Mediterranean : Regions with heavy summer rain and dry winter periods
(4) Temperate Grassland : Extremely high rainfall often exceeding 250 cm annually
(5) Question not attempted

18. Which of the following represents the correct sequence of vegetation layers in a tropical rainforest, moving from the top of the canopy down to the ground?
(1) Canopy, Emergent layer, Understory, Forest floor
(2) Emergent layer, Canopy, Understory, Forest floor
(3) Understory, Canopy, Emergent layer, Forest floor
(4) Emergent layer, Understory, Canopy, Forest floor
(5) Question not attempted

19. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.

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Assertion (A): Trees in the tropical savanna biome are usually widely spaced and often possess fire-resistant bark.
Reason (R): The savanna ecosystem experiences frequent seasonal fires during the dry season, which inhibits the growth of a dense continuous forest canopy.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

20. The tropical rainforest biome exhibits the highest terrestrial biodiversity. What is the primary climatic cause for this exceptional species richness?
(1) Frequent volcanic eruptions which provide minerals for extremely fertile forest soils
(2) The complete absence of predatory species due to the density of the forest vegetation
(3) Extreme seasonal variations which force rapid evolutionary changes in all resident life
(4) Stable year-round warmth and moisture allowing continuous plant growth
(5) Question not attempted

21. Consider the following statements regarding Tropical Deciduous (Monsoon) forests:
I. Moist deciduous forests are found in areas receiving 100 to 200 cm of rainfall.
II. Dry deciduous forests transition into thorn forests in areas receiving less than 70 cm of rainfall.
III. Bamboo, Sal, Shisham, and Sandalwood are prominent tree species of dry deserts.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

22. Match List I (Local Name of Mediterranean Vegetation) with List II (Region) and select the correct answer using the codes given below.
List I: (Local Name of Mediterranean Vegetation)
A. Maquis
B. Chaparral
C. Fynbos
D. Mallee
List II: (Region)
i. California
ii. South Africa
iii. Southern Europe
iv. Australia
Options:
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-ii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

23. Which of the following statements regarding Temperate Grasslands is incorrect?
(1) Prairies of North America receive more rainfall and generally have taller grasses compared to the Steppes of Eurasia
(2) Steppes are largely characterized by a highly continental climate with extremes of summer and winter temperatures
(3) The soils in these biomes, such as Chernozems or Mollisols, are rich in organic matter and highly fertile
(4) Temperate grasslands are typically found on the eastern margins of continents in the equatorial region
(5) Question not attempted

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24. Which of the following tree species is an odd one out as it is not typically characteristic of the Temperate Deciduous Forest biome?
(1) Baobab
(2) Oak
(3) Maple
(4) Beech
(5) Question not attempted

25. Consider the following statements about Temperate Rainforests of the Pacific Northwest (North America):
I. They are dominated by large coniferous trees rather than broadleaf deciduous trees.
II. The climate is moderated by oceanic currents, preventing severe freezing in winter.
III. Epiphytes like mosses and lichens are completely absent due to cold temperatures.
IV. This biome supports some of the tallest tree

species in the world, such as the Coastal Redwood.

Which of the above statement(s) is/are correct?
(1) I, II and III
(2) I, II and IV
(3) II, III and IV
(4) I, III and IV
(5) Question not attempted

26. Commercial lumbering is highly developed in the Boreal (Taiga) forests. Which of the following ecological characteristics makes this biome particularly suitable for the commercial timber industry?
(1) Extensive pure stands of single species simplify logging
(2) The trees are exceptionally hard and dense, making them ideal for heavy construction projects
(3) The year-round warm climate allows logging activities to proceed without seasonal interruption
(4) The dense undergrowth of shrubs and bushes provides additional valuable forest products for trade
(5) Question not attempted

27. Match List I (Biome) with List II (Dominant Soil Order/Type) and select the correct answer using the codes given below.
List I: (Biome)
A. Tropical Rainforest
B. Temperate Grassland
C. Boreal Forest (Taiga)
D. Tundra
List II: (Dominant Soil Order/Type)
i. Spodosol (Podzol)
ii. Gelisol (Permafrost soils)
iii. Oxisol (Lateritic soils)
iv. Mollisol (Chernozem)
Options:
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-i, C-iv, D-ii
(4) A-i, B-iv, C-iii, D-ii
(5) Question not attempted

28. Consider the following adaptations observed in desert vegetation (xerophytes):
I. Extensive, shallow root systems to rapidly absorb occasional rainfall.
II. Transformation of leaves into spines to reduce transpiration and deter herbivores.
III. Sunken stomata that open primarily during the day to maximize photosynthesis.
IV. Presence of thick, fleshy stems to store water.
V. Shedding of leaves during dry periods to conserve moisture.
Which of the above statement(s) is/are incorrect?
(1) I and III only
(2) III only
(3) II and IV only
(4) IV and V only
(5) Question not attempted

29. Arrange the following biomes in the correct order of their average annual precipitation, from the highest to the lowest.
A. Tropical Deciduous Forest
B. Desert
C. Tropical Rainforest
D. Tropical Savanna
Which of the following represents the correct order?
(1) C, A, D, B
(2) C, D, A, B
(3) A, C, D, B
(4) C, A, B, D
(5) Question not attempted

30. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Coral bleaching leads to the death of coral reefs if the stressful conditions persist for an extended period.
Reason (R): Bleaching occurs when corals expel the symbiotic zooxanthellae algae, which provide them with their primary source of nutrition and coloration.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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31. Match List I (Climatic Condition) with List II (Associated Biome) and select the correct answer using the codes given below.
List I: (Climatic Condition)
A. High temperature, heavy rainfall all year
B. Distinct wet and dry seasons, tall grasses
C. Mild wet winters, hot dry summers
D. Very short cool summers, long severe winters
List II: (Associated Biome)
i. Mediterranean
ii. Tundra
iii. Tropical Rainforest
iv. Tropical Savanna
Options:
(1) A-iii, B-iv, C-i, D-ii
(2) A-iii, B-i, C-iv, D-ii
(3) A-iv, B-iii, C-i, D-ii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

32. Consider the following statements regarding the concept and classification of biomes:
I. A biome is defined solely by the animal species present, irrespective of the vegetation.
II. Temperature and precipitation are the two primary climatic factors that determine the distribution of biomes globally.
III. Similar biomes can occur on different continents if the climatic conditions are comparable.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

33. In the Tropical Rainforest biome, plants that grow non-parasitically on other plants for physical support to reach sunlight are called:
(1) Halophytes
(2) Epiphytes
(3) Saprophytes
(4) Phreatophytes
(5) Question not attempted

34. Which of the following best describes the nutrient cycling process within a Tropical Rainforest biome?
(1) Rapid nutrient cycling where most minerals are stored in biomass rather than soil
(2) Nutrients are primarily stored deep within the mineral soil layer, taking many decades to complete a cycle
(3) Nutrient cycling is practically non-existent due to the continuous leaching of the soil by heavy rains
(4) Nutrients are stored in the thick layer of leaf litter that remains undecayed for several years at a time
(5) Question not attempted

35. Consider the following statements regarding the Tropical Savanna biome:
I. It is characterized by an alternating wet and dry season.
II. Elephant grass is a typical example of vegetation found in this biome.
III. It supports a vast number of grazing herbivores and their predators.
IV. It is completely devoid of any tree species.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) II and IV only
(5) Question not attempted

36. The following question consists of two statements—Statement I and Statement II. Answer the question by selecting the appropriate option.
Statement I: Plants in the Mediterranean biome have thick, waxy, and leathery leaves to minimize moisture loss.
Statement II: These adaptations are necessary because the region experiences its highest rainfall during the hot summer months.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

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37. Which of the following sequences correctly represents the descending order of Net Primary Productivity (NPP) among the given biomes?
(1) Tropical Rainforest, Temperate Deciduous Forest, Tropical Savanna, Desert
(2) Temperate Deciduous Forest, Tropical Rainforest, Desert, Tropical Savanna
(3) Tropical Rainforest, Tropical Savanna, Desert, Temperate Deciduous Forest
(4) Tropical Savanna, Tropical Rainforest, Temperate Deciduous Forest, Desert
(5) Question not attempted

38. In which of the following regions is the Temperate Deciduous Forest biome prominently distributed?
(1) The Congo Basin and Amazon Basin
(2) Eastern United States, Western Europe, and Eastern China
(3) Central Australia and the Sahara
(4) Northern Canada and Northern Siberia
(5) Question not attempted

39. Match List I (Geographical Region) with List II (Natural Biome) and select the correct answer using the codes given below.
List I: (Geographical Region)
A. Zaire Basin
B. Eurasian Steppe
C. Northern Siberia
D. Western Australia
List II: (Natural Biome)
i. Desert
ii. Tundra
iii. Temperate Grassland
iv. Tropical Rainforest
Options:
(1) A-iv, B-iii, C-ii, D-i
(2) A-iv, B-i, C-ii, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

40. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Trees in the Tundra biome are either entirely absent or appear as very low, stunted shrubs.
Reason (R): The presence of permafrost limits root penetration, and high winds make it difficult for tall vegetation to survive.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

41. Consider the following statements regarding cacti and other desert vegetation adaptations:
I. They often possess Crassulacean Acid Metabolism (CAM) to fix carbon dioxide at night.
II. Leaves are frequently reduced to spines to decrease surface area.
III. Stems are typically photosynthetic and succulent.
IV. They continuously transpire water during the hottest part of the day to stay cool.
V. They have an extensive network of shallow roots to capture brief showers.
Which of the above statement(s) is/are correct?
(1) I, II, III and V
(2) I, III, IV and V
(3) II, III, IV and V
(4) I, II, III, IV and V
(5) Question not attempted

42. Which of the following features is incorrectly paired with its ecological function in Mangrove forests?
(1) Vivipary : Seeds detach and fall directly into the mud before developing roots
(2) Pneumatophores : Aerial roots that facilitate gaseous exchange in waterlogged soils
(3) Stilt roots : Provide structural support against strong tidal currents
(4) Salt-excreting leaves : Allow survival in high salinity coastal environments
(5) Question not attempted

43. Match List I (Type of Coral Reef) with List II (Description) and select the correct answer using the codes given below.
List I: (Type of Coral Reef)
A. Fringing Reef
B. Barrier Reef
C. Atoll
D. Patch Reef

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List II: (Description)
i. A ring-shaped coral reef enclosing a lagoon
ii. A reef directly attached to the shore or bordering it with a shallow channel
iii. Small, isolated reef platforms found within a lagoon
iv. A reef separated from the mainland or island by a deep, wide lagoon
Options:
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iv, D-iii
(4) A-i, B-iv, C-ii, D-iii
(5) Question not attempted

44. Consider the following statements regarding the climatic limits of natural vegetation:
I. The timberline marks the maximum altitude or latitude beyond which trees cannot grow due to environmental conditions.
II. Beyond the snowline, permanent snow limits all forms of macroscopic plant life.
III. The timberline and the snowline exist at the exact same altitude on any given mountain range.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III only
(3) II and III only
(4) I, II and III
(5) Question not attempted

45. Biomes are primarily classified into terrestrial and aquatic ecosystems. Which of the following is not considered a terrestrial biome?
(1) Taiga
(2) Tropical Savanna
(3) Pelagic zone
(4) Temperate Grassland
(5) Question not attempted

46. The Tropical Rainforest biome is distributed near the equator across multiple continents. Which of the following regions does not contain significant areas of tropical rainforest?
(1) The Congo Basin
(2) Southeast Asia
(3) The Amazon Basin
(4) The Patagonian region
(5) Question not attempted

47. Consider the following statements regarding the distribution and characteristics of Tropical Deciduous (Monsoon) forests:
I. They are predominantly found in India, Myanmar, Thailand, and parts of Northern Australia.
II. Their structure is largely dependent on the seasonal reversal of winds.
III. These forests generally support a higher density of tall, evergreen trees compared to rainforests.
IV. They yield commercially valuable hardwood timbers like Sal and Teak.
Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) II, III and IV
(3) I, II and III
(4) I, III and IV
(5) Question not attempted

48. In the Tropical Savanna biome, trees are widely scattered rather than forming a closed canopy. What is the primary cause of this specific vegetation structure?
(1) Continuous sub-zero temperatures during winter periods destroy all emerging tree saplings
(2) A mix of long dry seasons, seasonal fires, and large herbivores limiting tree density
(3) Severe and permanent nutrient deficiency in the soil which completely prevents dense tree growth
(4) Artificial land clearing by various indigenous tribes over thousands of years has removed the forests
(5) Question not attempted

49. Match List I (Grassland) with List II (Continent) and select the correct answer using the codes given below.
List I: (Grassland)
A. Steppes
B. Pampas
C. Veld
D. Prairies
List II: (Continent)
i. North America
ii. Eurasia
iii. South America
iv. Africa
Options:

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(1) A-ii, B-iii, C-iv, D-i
(2) A-i, B-iv, C-iii, D-ii
(3) A-ii, B-iv, C-iii, D-i
(4) A-iii, B-ii, C-iv, D-i
(5) Question not attempted

50. In the temperate rainforests of the Pacific coast of North America, which species of tree is famously known for its enormous height and longevity?
(1) Coastal Redwood (Sequoia sempervirens)
(2) Eucalyptus regnans
(3) Banyan (Ficus benghalensis)
(4) Baobab (Adansonia)
(5) Question not attempted

51. Consider the following statements regarding the needle-shaped leaves of coniferous trees in the Boreal (Taiga) forest:
I. They reduce the surface area, thereby minimizing water loss through transpiration.
II. Their waxy coating protects them from freezing temperatures.
III. The shape allows snow to easily slide off, preventing branch breakage.
IV. They fall off every winter to conserve energy.
V. They are dark in color to maximize the absorption of weak winter sunlight.
Which of the above statement(s) is/are incorrect?
(1) I and III only
(2) IV only
(3) II and V only
(4) III and IV only
(5) Question not attempted

52. Which of the following statements accurately distinguishes Alpine Tundra from Arctic Tundra?
(1) Alpine Tundra is found only in the Northern Hemisphere, whereas Arctic Tundra is found in both the North and South
(2) Alpine Tundra contains many tall tree species, whereas Arctic Tundra contains only grasses and very low shrubs
(3) Alpine Tundra is characterized by continuous permafrost, whereas Arctic Tundra typically has no permafrost layer
(4) Alpine Tundra occurs at high altitudes, while Arctic Tundra occurs at high latitudes
(5) Question not attempted

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53. The following question consists of two statements—Statement I and Statement II. Answer the question by selecting the appropriate option.
Statement I: Phreatophytes are a specific type of desert plant adapted to arid environments.
Statement II: They survive dry conditions by developing extremely long taproots that reach deep underground water tables.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

54. Mangrove forests play a critical ecological role in coastal regions. Which of the following is not a recognized ecological benefit of mangroves?
(1) They act as a natural barrier, reducing coastal erosion from storm surges and waves
(2) Their complex root systems serve as nurseries for various marine species
(3) They increase the salinity of coastal waters, making them suitable for freshwater fish
(4) They filter pollutants and trap sediments from river runoff before it reaches coral reefs
(5) Question not attempted

55. The Great Barrier Reef, the world's largest coral reef system known for its immense biodiversity, is located in the waters off the coast of:
(1) The southeastern coast of the United States
(2) The western coast of South America
(3) The eastern coast of Africa
(4) The northeastern coast of Australia
(5) Question not attempted

56. Which of the following pairs of Biome and Soil fertility is correctly matched?
(1) Temperate Grassland : Highly fertile soil with a thick, dark humus layer
(2) Tropical Rainforest : Deep, extremely fertile soil which is rich in retained organic nutrients
(3) Desert : Waterlogged, highly acidic peat soils found in low-lying arid depressions

(4) Tundra : Highly leached, reddish laterite soil typical of sub-polar mountain ranges
(5) Question not attempted

57. Which of the following statements regarding the boundaries of biomes is incorrect?
(1) The transitional zone between two contiguous biomes is referred to as an ecotone
(2) Ecotones often exhibit a higher species diversity than the adjacent biomes, a phenomenon known as the edge effect
(3) Biome boundaries are sharply defined, with one biome ending abruptly where another begins
(4) Changes in latitude and altitude lead to gradual shifts in vegetation types, forming continuous transition zones
(5) Question not attempted

58. In the context of tropical rainforest vegetation, what is the correct definition of "Lianas"?
(1) Woody vines rooting in soil that climb trees to reach the canopy
(2) Specialized carnivorous plants that feed on insects due to very nutrient-poor soils
(3) Fungi species responsible for the rapid decomposition of organic matter on the forest floor
(4) Small, shrub-like plants that form the dense understory layer of the primary rainforest
(5) Question not attempted

59. Many emergent and canopy trees in the tropical rainforest have prominent "buttress roots". What is their primary function?
(1) To tap into deep subterranean aquifers during dry periods
(2) To store starch and water for the tree's dry season metabolism
(3) To excrete excess salts absorbed from the highly acidic soil
(4) To provide structural support in shallow, nutrient-poor soils
(5) Question not attempted

60. The Indian subcontinent is largely characterized by tropical deciduous forests. Which of the following tree species is generally not found in these forests?
(1) Sal
(2) Mahogany
(3) Teak
(4) Neem
(5) Question not attempted

61. The tropical savannas are known by different regional names. The "Llanos" and "Campos" are vast tropical savanna regions located respectively in:
(1) South Africa and Kenya
(2) Argentina and Uruguay
(3) Venezuela and Brazil
(4) Australia and New Zealand
(5) Question not attempted

62. Which vegetation type is primarily characterized by 'sclerophyllous' (hard-leaved) plants?
(1) Tropical Deciduous Forest
(2) Tundra Vegetation
(3) Mangrove Forests
(4) Mediterranean Vegetation
(5) Question not attempted

63. Temperate grassland biomes boast some of the most fertile soils in the world. Which of the following is the primary cause for the accumulation of deep, dark humus in these soils?
(1) The annual decay of extensive grass root systems and above-ground biomass
(2) Heavy, year-round rainfall that promotes rapid chemical weathering of rocks
(3) The frequent deposition of highly fertile volcanic ash
(4) The complete absence of soil-dwelling bacteria and earthworms
(5) Question not attempted

64. Which of the following is an incorrectly matched feature of the Temperate Deciduous Forest biome?
(1) Leaves : Broad-leaved to capture sunlight during summer
(2) Soil : Extremely acidic and permanently frozen (permafrost)
(3) Seasonality : Distinct four seasons (spring, summer, autumn, winter)
(4) Winter adaptation : Complete shedding of leaves (abscission)
(5) Question not attempted

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65. What is the most distinguishing difference between a Temperate Rainforest and a Tropical Rainforest?
(1) Temperate rainforests possess significantly higher levels of biodiversity than tropical rainforests
(2) Temperate rainforests have seasonal variation; tropical rainforests stay warm
(3) Temperate rainforests receive less than 50 cm of annual rainfall, whereas tropical rainforests receive well over 200 cm
(4) Temperate rainforests are dominated by broadleaf deciduous trees, while tropical rainforests are dominated by coniferous trees
(5) Question not attempted

66. Which of the following correctly describes the biodiversity of the Boreal Forest (Taiga)?
(1) Low plant species diversity, often consisting of extensive tracts of conifer species
(2) It contains the highest plant species diversity of any known terrestrial biome on Earth
(3) It exhibits high diversity of reptiles and amphibians due to its vast network of bogs and lakes
(4) It is dominated entirely by a wide variety of broad-leaved deciduous trees and flowering shrubs
(5) Question not attempted

67. Vegetation in the Tundra biome is uniquely adapted to survive extremely short growing seasons and freezing temperatures. Which of the following plant types is not typically found in the Tundra?
(1) Lichens
(2) Mosses
(3) Epiphytic orchids
(4) Dwarf willows
(5) Question not attempted

68. Certain desert plants are termed "ephemerals." How do these plants survive the harsh desert climate?
(1) By storing large amounts of water in their deep taproots for use over several years of drought
(2) By going into a state of suspended animation, drying out completely until the next rainfall occurs
(3) By surviving exclusively as parasites on the roots of larger perennial desert shrubs and trees
(4) Completing a rapid life cycle quickly following rare rainfall events
(5) Question not attempted

69. Mangroves possess several unique adaptations to survive in harsh coastal environments. Which of the following is not an adaptation typical of mangrove trees?
(1) Prop roots
(2) Pneumatophores
(3) Needle-like leaves
(4) Viviparous germination
(5) Question not attempted

70. Corals depend on a symbiotic relationship with microscopic algae called zooxanthellae. Which of the following statements about this relationship is incorrect?
(1) Zooxanthellae live within the tissues of the coral polyps
(2) Zooxanthellae are entirely responsible for secreting the calcium carbonate skeleton of the reef
(3) Through photosynthesis, zooxanthellae provide the coral with essential nutrients and energy
(4) The coral provides the zooxanthellae with a protected environment and the compounds they need for photosynthesis
(5) Question not attempted

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71. The following question consists of two statements—Statement I and Statement II. Answer the question by selecting the appropriate option.
Statement I: The sequence of biomes observed when traveling from the equator to the poles is broadly mirrored when ascending a tall mountain in the tropics.
Statement II: This occurs because increasing altitude results in temperature and precipitation changes similar to those caused by increasing latitude.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is

incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

72. While defining biomes, the terms ecosystem and biome are related but distinct. Which of the following best highlights the relationship?
(1) A biome is a large area with multiple similar ecosystems defined by climate
(2) A biome is a smaller subdivision within a single ecosystem
(3) An ecosystem refers strictly to abiotic factors, while a biome refers to biotic factors
(4) A biome only includes the plant life of a region, while an ecosystem only includes the animal life
(5) Question not attempted

73. Which of the following statements explains why laterite soils, typical of tropical rainforests, are generally unsuitable for sustained agricultural use post-deforestation?
(1) They are too rich in organic matter, causing crops to rot before maturity
(2) They possess a permanently frozen subsurface layer that inhibits crop root growth
(3) Heavy rainfall leaches nutrients, leaving aluminum and iron oxides
(4) They are excessively alkaline due to high evaporation rates bringing salts to the surface
(5) Question not attempted

74. Forests dominated by commercially valuable species like Teak and Sal are the hallmark of which biogeographical zone in India?
(1) Tropical Deciduous Forests
(2) Himalayan Alpine Zone
(3) Tropical Evergreen Rainforests
(4) Mangrove Tidal Forests
(5) Question not attempted

75. Which of the following statements regarding the climate of the Tropical Savanna biome is incorrect?
(1) It is situated between the equatorial rainforests and tropical deserts
(2) It experiences a distinct dry season during winter and a wet season during summer
(3) Temperatures remain relatively high throughout the year, without a severe cold winter
(4) Savanna rainfall is higher and more distributed than in the rainforest biome
(5) Question not attempted

76. The Mediterranean biome is globally renowned for a specific type of agriculture centered around the cultivation of grapes for wine production. This practice is formally known as:
(1) Silviculture
(2) Viticulture
(3) Sericulture
(4) Horticulture
(5) Question not attempted

77. The Temperate Grasslands are often referred to as the "granaries of the world." What ecological characteristic of this biome makes it most suitable for extensive cereal cultivation?
(1) The year-round heavy rainfall which mimics irrigated agriculture conditions
(2) The complete absence of extreme weather events like frost or droughts
(3) Nutrient-rich soils and flat topography suitable for mechanized farming
(4) The high density of nitrogen-fixing tree species scattered throughout the plains
(5) Question not attempted

78. What is the primary cause of the high acidity of soils found in the Boreal Forest (Taiga) biome?
(1) High rates of evaporation leaving acid salts on the surface
(2) The underlying bedrock being universally composed of acidic granite
(3) Frequent acid rain caused by naturally occurring forest fires
(4) Conifer needles releasing acidic compounds during slow decomposition
(5) Question not attempted

79. Which of the following deserts is correctly paired with the continent it is located on?
(1) Mojave Desert : North America
(2) Atacama Desert : Africa
(3) Kalahari Desert : South America
(4) Great Victoria Desert : Asia
(5) Question not attempted

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80. While coral reefs face numerous localized threats such as overfishing and pollution, what is currently recognized as the most severe, widespread threat to global coral reef survival?

(1) Destructive bottom-trawling fishing practices
(2) Climate change, ocean warming, and acidification
(3) The introduction of invasive starfish species
(4) Increased turbidity from coastal land projects
(5) Question not attempted

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ANSWERS

1. (2) A major biotic community of regional flora and fauna primarily categorized by its dominant climate
A biome represents a large-scale biological community that is fundamentally shaped by the regional climate, particularly temperature and precipitation patterns. It encompasses diverse ecosystems within a specific geographic area that share similar environmental conditions. This classification focuses on the dominant vegetation and adapted animal life, providing a broad framework for understanding the global distribution of life on Earth.

2. (1) A-iii, B-iv, C-i, D-ii
Temperate grasslands are found across various continents and are known by distinct regional names. Prairies are located in North America, while Pampas characterize the fertile plains of South America. In Africa, these grasslands are called Veld, specifically in the southern region. Finally, the Downs represent the unique temperate grassland ecosystems found throughout the Australian continent, supporting various specialized species.

3. (3) Selvas
Selvas is the specific local name for the dense tropical rainforests of the Amazon Basin. These forests are characterized by extremely high rainfall, year-round warmth, and a vast diversity of broad-leaved evergreen trees. They represent one of the most biodiverse terrestrial ecosystems on Earth, playing a crucial role in global climate regulation and carbon storage through their immense biomass.

4. (1) Both A and R are true and R is the correct explanation of A.
Heavy precipitation in tropical regions causes severe leaching, which removes essential minerals and nutrients from the soil, leaving it acidic and nutrient-poor. Simultaneously, high temperatures and humidity promote extremely rapid bacterial decomposition. This ensures that any organic matter falling to the forest floor is quickly broken down and immediately reabsorbed by the dense vegetation biomass, rather than accumulating.

5. (3) I and III only
Tropical rainforests possess a complex vertical stratification consisting of several distinct layers. The emergent layer contains the tallest trees rising above the canopy to capture maximum sunlight. Conversely, the forest floor receives very little light, which severely restricts the growth of green plants. The understory remains relatively dark and humid, supporting only those species specifically adapted to low-light forest environments.

6. (2) Presence of broad, thin leaves to maximize transpiration cooling
Xerophytic plants employ various specialized strategies to minimize water loss and maximize moisture retention in arid environments. Common adaptations include deep taproots, waxy leaf coatings, and succulent stems for water storage. However, broad and thin leaves are avoided because they would significantly increase transpiration rates. Instead, desert plants often reduce leaf surface area or transform leaves into sharp spines.

7. (4) Trees in these forests shed their leaves simultaneously during the dry season to conserve water
Tropical deciduous or monsoon forests are defined by their adaptation to a distinct dry season following heavy monsoon rains. To conserve moisture during the period of water scarcity, the trees shed their leaves simultaneously. This seasonal behavior distinguishes them from evergreen rainforests. These forests are typically found in regions with seasonal wind reversals and specific annual rainfall patterns globally.

8. (1) B, D, C, A
Global vegetation patterns change systematically from the equator toward the poles due to variations in temperature and moisture. Starting at the equator, one encounters tropical rainforests, followed by tropical savannas. Moving further

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north, the landscape transitions into boreal forests, also known as taiga, characterized by hardy conifers. Finally, the cold, treeless tundra biome dominates the high Arctic and polar regions.

9. (3) Southeastern United States
The Mediterranean climate is unique for having mild, wet winters and hot, dry summers. This climatic pattern and its associated sclerophyllous vegetation are found in specific regions like Central Chile, California, and Southwestern Australia. However, the Southeastern United States experiences a humid subtropical climate with significant summer rainfall, which does not support typical Mediterranean-style drought-resistant plant communities and shrubs.

10. (1) Seasonal changes in temperature and daylight that trigger dormancy to prevent winter moisture loss
In temperate deciduous forests, the primary trigger for leaf abscission is the reduction in daylight hours and falling temperatures during autumn. This process prepares the trees for winter dormancy, protecting them from physical damage caused by freezing and preventing excessive water loss. By shedding leaves, trees conserve vital energy and resources until favorable growing conditions return in the following spring.

11. (3) I, II and III
Mangroves are specialized coastal trees adapted to saline, intertidal environments. They utilize pneumatophores to access oxygen in waterlogged soils and exhibit vivipary, where seeds germinate while still attached to the parent. These forests are found in tropical and subtropical regions rather than freshwater lakes. Their unique roots provide stability against tides while filtering salt to ensure survival in harsh conditions.

12. (2) Silver Fern and Kauri
New Zealand's temperate rainforests are unique ecosystems characterized by high precipitation and moderate temperatures throughout the year. Characteristic species include the iconic silver fern and the massive kauri tree, which is among the largest in the world. These forests also host a variety of mosses and liverworts, thriving in the consistently moist environment provided by the surrounding maritime climate.

13. (1) A-ii, B-iv, C-i, D-iii
Different biomes are defined by their dominant tree species adapted to specific climates. Tropical deciduous forests feature teak and sal, while rainforests are known for mahogany and rosewood. Boreal forests consist mainly of conifers like pine and spruce. Mediterranean regions support drought-resistant trees such as cork oak and olive, which have thick bark and leathery leaves for protection against summer heat.

14. (1) Both Statement I and Statement II are correct
The tundra biome is characterized by extremely cold temperatures and a layer of permanently frozen soil called permafrost. This frozen ground prevents deep root penetration, effectively excluding large trees from the landscape. Arctic tundra is found at high latitudes, while alpine tundra occurs at high elevations on mountains globally. Both types share characteristics like low-growing vegetation, mosses, and hardy lichens.

15. (2) III and V only
Coral reefs require specific environmental conditions to flourish, including warm temperatures and clear, shallow water for sunlight penetration. They cannot survive in completely fresh water, as they need specific salinity levels for their physiological processes. Additionally, heavy sedimentation or muddy waters are harmful because they block sunlight and can smother the delicate coral polyps, hindering their growth and reef formation.

16. (2) Boreal Forest (Taiga)
Podzolization is a soil formation process characteristic of the cool, moist climates found in boreal forest or taiga biomes. The slow decomposition of coniferous needles produces organic acids that leach minerals from the upper soil horizons. This results in the formation of acidic, ash-grey soils known as podzols or spodosols, which are typically low in primary nutrients required for agriculture.

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17. (2) Tropical Rainforest : Consistent high heat and rainfall throughout the year
Tropical rainforests are uniquely characterized by consistent environmental conditions, including high temperatures and abundant rainfall throughout the year. Unlike other biomes that experience distinct dry or cold seasons, rainforests maintain a stable climate that supports continuous plant growth and immense biodiversity. This lack of seasonality allows for complex ecological interactions and a highly stratified forest structure to develop over time.

18. (2) Emergent layer, Canopy, Understory, Forest floor
The vertical structure of a tropical rainforest is organized into layers based on sunlight availability. The emergent layer consists of the tallest trees that pierce the top canopy. Below this is the main canopy, a thick layer of foliage. The understory receives significantly less light and consists of smaller trees. Finally, the dark forest floor contains decaying matter and fungi.

19. (1) Both A and R are true and R is the correct explanation of A.
Trees in the tropical savanna biome are adapted to survive a long dry season and frequent naturally occurring fires. Their fire-resistant bark and wide spacing prevent the development of a continuous canopy, allowing grasses to dominate the landscape. These adaptations are essential because seasonal fires clear undergrowth and prevent the encroachment of dense forest, maintaining the unique grassland-woodland mosaic structure.

20. (4) Stable year-round warmth and moisture allowing continuous plant growth
The exceptional species richness of tropical rainforests is primarily driven by a stable climate featuring year-round warmth and moisture. This consistency allows for continuous photosynthesis and reproduction, eliminating the need for dormancy. Such favorable conditions support complex ecological niches and intense competition, leading to high levels of specialization among both plant and animal species across the different forest layers.

21. (1) I and II only
Tropical deciduous forests are classified based on annual rainfall totals. Moist deciduous forests thrive in regions receiving between 100 and 200 centimeters of rain. As rainfall decreases below 70 centimeters, these forests transition into thorn forests. Species like teak and sandalwood are typical of deciduous environments, whereas true desert regions support very different, highly specialized drought-tolerant vegetation types and succulents.

22. (1) A-iii, B-i, C-ii, D-iv
Mediterranean vegetation has various regional names depending on its global location. It is known as Maquis in Southern Europe and Chaparral in California. In South Africa, this unique plant community is called Fynbos, while in Australia, it is referred to as Mallee. All these regions share similar drought-resistant adaptations, such as small, leathery leaves and thick, protective bark for survival.

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23. (4) Temperate grasslands are typically found on the eastern margins of continents in the equatorial region
Temperate grasslands are found in the mid-latitudes, typically in the interiors of continents, rather than the equatorial regions. These biomes, such as the North American prairies and Eurasian steppes, experience continental climates with hot summers and cold winters. Their soils, including Mollisols and Chernozems, are exceptionally fertile due to the accumulation of organic matter from decaying grass root systems.

24. (1) Baobab
The temperate deciduous forest is dominated by broad-leaved trees like oak, maple, and beech, which shed their leaves in winter. In contrast, the baobab is a specialized tree characteristic of tropical savanna biomes, particularly in Africa. It is known for its massive, water-storing trunk and ability to survive long dry seasons, making it ecologically distinct from the temperate species.

25. (2) I, II and IV
The temperate rainforests of the Pacific Northwest are unique because they are dominated by massive conifers, such as coastal redwoods. The maritime climate provides mild winters and high moisture levels, which support diverse

epiphytes like mosses and lichens. These forests reach incredible heights due to the consistent availability of water and the lack of severe freezing temperatures throughout the year.

26. (1) Extensive pure stands of single species simplify logging
Commercial lumbering is highly efficient in boreal forests because they often consist of vast, pure stands of a single tree species. This uniformity simplifies harvesting and processing for the timber industry. Additionally, the wood from these conifers is generally soft and easy to work with, making it ideal for the production of paper pulp and construction lumber globally.

27. (1) A-iii, B-iv, C-i, D-ii
Biomes are associated with specific soil types formed by local climate and vegetation. Tropical rainforests have heavily leached Oxisols, while temperate grasslands possess fertile Mollisols. Boreal forests are characterized by acidic Spodosols created by needle decay. In the cold tundra, Gelisols predominate, featuring a permafrost layer that restricts drainage and limits the development of distinct soil profiles and horizons.

28. (2) III only
Desert vegetation uses various adaptations to manage water stress. These include thick stems for storage and spines to reduce transpiration. While many plants have shallow roots for quick absorption, others have deep taproots. However, having stomata that open during the day is not an adaptation for water conservation; instead, many desert plants open stomata at night to prevent moisture loss.

29. (1) C, A, D, B
Annual precipitation levels vary significantly across terrestrial biomes. Tropical rainforests receive the highest amount of rainfall, followed by tropical deciduous forests which have a distinct dry season. Tropical savannas receive less rain, supporting grasses rather than dense forests. Deserts occupy the lowest end of the spectrum, receiving very little moisture, which severely limits the density and type of vegetation present.

30. (1) Both A and R are true and R is the correct explanation of A.
Coral bleaching is a stress response where coral polyps expel the symbiotic zooxanthellae living in their tissues. These algae provide the corals with essential nutrients through photosynthesis and give them their vibrant colors. If stressful conditions like high water temperatures persist, the corals cannot recover their nutritional source, leading to starvation and eventual death of the entire reef system.

31. (1) A-iii, B-iv, C-i, D-ii
Global biomes are primarily determined by specific climatic conditions. Tropical rainforests experience constant high heat and heavy rainfall. Savannas have distinct wet and dry seasons with tall grasses. Mediterranean biomes are defined by mild, wet winters and hot, dry summers. Tundra regions face extremely short, cool summers and long, severe winters, which severely limit the types of vegetation present.

32. (2) II and III only
Biomes are large-scale biological communities primarily defined by their dominant vegetation, though animal life is also a component. Temperature and precipitation are the fundamental climatic drivers that determine where specific biomes occur. Because climate patterns can be similar across different continents, analogous biomes with similar plant adaptations can develop in geographically separated regions, such as various Mediterranean areas.

33. (2) Epiphytes
Epiphytes are specialized plants found in tropical rainforests that grow on the branches or trunks of taller trees for physical support. Unlike parasites, they do not derive nutrients from their host. Instead, they use this elevated position to reach sunlight, which is scarce on the forest floor. They obtain moisture and nutrients from the air, rain, and debris.

34. (1) Rapid nutrient cycling where most minerals are stored in biomass rather than soil
Tropical rainforests are characterized by extremely rapid nutrient cycling. Due to high temperatures and humidity, decomposers break down organic matter almost immediately. The resulting nutrients are quickly reabsorbed

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by the dense root systems of the vegetation. Consequently, most of the ecosystem's nutrients are stored within the living biomass itself, rather than accumulating in the heavily leached and acidic soil.

35. (3) IV only
The tropical savanna biome is defined by its alternating wet and dry seasons, which support vast grasslands and large populations of herbivores. While the landscape is dominated by grasses like elephant grass, it is not entirely devoid of trees. Instead, it features scattered, fire-resistant trees that do not form a closed canopy, allowing sunlight to reach the ground-level vegetation.

36. (3) Statement I is correct but Statement II is incorrect
Plants in the Mediterranean biome have evolved thick, waxy leaves to minimize water loss during the intense drought of summer. This sclerophyllous vegetation is essential for survival because the region receives most of its rainfall during the mild winters, while the summers remain hot and extremely dry. These adaptations allow the plants to endure long periods without significant moisture availability.

37. (1) Tropical Rainforest, Temperate Deciduous Forest, Tropical Savanna, Desert
Net Primary Productivity represents the rate at which plants produce useful chemical energy. Tropical rainforests have the highest productivity due to year-round growth conditions. They are followed by temperate deciduous forests and tropical savannas. Deserts have the lowest productivity among these biomes because extreme water scarcity severely limits plant growth and the total amount of biomass that can be sustained.

38. (2) Eastern United States, Western Europe, and Eastern China
The temperate deciduous forest biome is prominently distributed in the mid-latitudes of the Northern Hemisphere. Key regions include the Eastern United States, Western Europe, and Eastern China. These areas experience four distinct seasons with moderate precipitation and cold winters. The trees in these forests are adapted to this seasonality by shedding their broad leaves in autumn to survive winter.

39. (1) A-iv, B-iii, C-ii, D-i
Different geographical regions are home to specific biomes based on their latitude and climate. The Zaire Basin contains tropical rainforests, while the Eurasian Steppe is a major temperate grassland. Northern Siberia is characterized by cold tundra vegetation. In contrast, Western Australia is largely occupied by desert biomes. Each of these regions reflects the dominant environmental factors of its geographical location.

40. (1) Both A and R are true and R is the correct explanation of A.
Trees are largely absent from the tundra because the short growing season and cold temperatures are insufficient for significant wood growth. The presence of permafrost limits root depth, while high winds and frozen ground make it difficult for tall vegetation to remain stable. Consequently, the vegetation is restricted to low-growing mosses, lichens, and stunted shrubs that hug the ground.

41. (1) I, II, III and V
Desert plants like cacti employ specialized strategies to survive extreme aridity. Many use CAM photosynthesis to fix carbon at night, minimizing daytime water loss. Their leaves are often reduced to spines, and their succulent stems store water and perform photosynthesis. Additionally, shallow root networks quickly capture rare rainfall. Constant transpiration during the day is avoided as it would cause dehydration.

42. (1) Vivipary : Seeds detach and fall directly into the mud before developing roots
Mangroves use several adaptations for coastal survival. Stilt roots provide stability against tides, and salt-excreting leaves manage salinity. Pneumatophores allow roots to breathe in oxygen-poor mud. However, vivipary involves seeds germinating while still attached to the parent tree, allowing them to develop into seedlings before falling. This gives them a better chance of establishing themselves in the shifting intertidal environment.

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43. (1) A-ii, B-iv, C-i, D-iii
Coral reefs are categorized by their structure and relationship to land. Fringing reefs are directly attached to shores. Barrier reefs are separated from land by a wide lagoon. Atolls are ring-shaped reefs that enclose a central lagoon, often forming after a volcanic island subsides. Patch reefs are small, isolated platforms found within larger lagoon systems, providing localized habitats for marine life.

44. (2) III only
The timberline and snowline are critical ecological boundaries on mountains. The timberline marks the limit beyond which trees cannot grow due to cold and wind. The snowline indicates where permanent snow begins, preventing macroscopic plant life. While both are determined by climate, they do not exist at the same altitude; the timberline always occurs at a lower elevation than the snowline.

45. (3) Pelagic zone
Terrestrial biomes are large-scale land-based communities defined by climate and vegetation, such as the taiga, savanna, and temperate grasslands. In contrast, the pelagic zone is an aquatic environment referring to the open ocean water column. Aquatic biomes are classified by different factors like salinity and depth, distinguishing them from the vegetation-based classification used for land-based ecosystems across the globe.

46. (4) The Patagonian region
Tropical rainforests are concentrated near the equator where heat and rainfall are consistent. This includes the Amazon Basin, the Congo Basin, and Southeast Asia. The Patagonian region, located at the southern tip of South America, is characterized by cold, arid, or temperate climates and contains grasslands and shrublands rather than the lush, evergreen vegetation typical of the tropics near the equator.

47. (1) I, II and IV
Tropical deciduous forests, often called monsoon forests, are common in India and Southeast Asia. They are adapted to seasonal rainfall patterns driven by monsoon winds. These forests yield valuable hardwoods like teak and sal, which are commercially significant. Unlike rainforests, they have a less complex structure and lose their leaves during the dry season to conserve water and survive.

48. (2) A mix of long dry seasons, seasonal fires, and large herbivores limiting tree density
The open structure of the tropical savanna is maintained by several interacting factors. A long dry season limits tree growth, while frequent seasonal fires destroy many saplings. Additionally, the presence of large grazing herbivores prevents the development of a dense forest canopy. These environmental pressures ensure that grasses remain the dominant vegetation, with trees appearing only as widely scattered individuals.

49. (1) A-ii, B-iii, C-iv, D-i
Grasslands around the world are identified by specific names based on their continental location. Steppes are found in Eurasia, while Prairies dominate the interior of North America. South America is home to the fertile Pampas, and the Veld is the characteristic grassland of South Africa. Each of these biomes supports unique wildlife and has been significantly modified for agriculture and grazing.

50. (1) Coastal Redwood (Sequoia sempervirens)
The coastal redwood is a characteristic species of the temperate rainforests along the Pacific coast of North America. These trees are renowned for being among the tallest and oldest living organisms on Earth. They thrive in the mild, moist climate and persistent fog of the region, which provides the consistent hydration necessary to support such massive biological structures over many centuries.

51. (2) IV only
Coniferous trees in the boreal forest have evolved needle-shaped leaves to survive harsh winters. Their small surface area and waxy coating reduce water loss and prevent freezing. The shape also prevents snow accumulation from breaking branches. Most boreal conifers are evergreen and do not shed their leaves in winter; this allows them to begin photosynthesis immediately when temperatures rise in spring.

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52. (4) Alpine Tundra occurs at high altitudes, while Arctic Tundra occurs at high latitudes
While both biomes are treeless and cold, Arctic tundra and alpine tundra are distinguished by their location. Arctic tundra occurs at high latitudes near the poles and is often underlain by permafrost. Alpine tundra is found at high altitudes on mountains worldwide, regardless of latitude. In alpine regions, better drainage and the lack of continuous permafrost often result in different soil characteristics.

53. (1) Both Statement I and Statement II are correct
Phreatophytes are a specialized group of desert plants that have adapted to arid conditions by developing extremely long taproots. These roots extend deep into the earth to reach the underlying water table, providing a consistent moisture source. This strategy allows them to remain green and survive even when the surface soil is completely dry and other vegetation has withered away.

54. (3) They increase the salinity of coastal waters, making them suitable for freshwater fish
Mangroves provide essential ecological services, such as protecting coasts from erosion, trapping sediment, and serving as nurseries for marine life. They act as natural filters for pollutants before they reach the ocean. However, mangroves do not increase the salinity of coastal waters to support freshwater fish. Instead, they are highly adapted to survive and thrive in saline or brackish water environments.

55. (4) The northeastern coast of Australia
The Great Barrier Reef is the largest and most famous coral reef system on Earth, spanning thousands of kilometers. It is located in the Coral Sea, off the northeastern coast of Australia. This massive structure is built by billions of tiny coral polyps and supports an incredible diversity of marine life, making it a globally significant site for marine conservation and biodiversity.

56. (1) Temperate Grassland : Highly fertile soil with a thick, dark humus layer
Temperate grasslands possess some of the most fertile soils globally, often classified as Mollisols or Chernozems. These soils are deep and rich in organic matter due to the annual decomposition of extensive grass root systems. In contrast, tropical rainforest soils are typically nutrient-poor and leached, while tundra soils are often frozen, and desert soils are frequently thin and lack organic material.

57. (3) Biome boundaries are sharply defined, with one biome ending abruptly where another begins
Biome boundaries are rarely sharp or sudden. Instead, they usually consist of gradual transition zones known as ecotones. In these areas, the characteristics of adjacent biomes overlap, often leading to higher species diversity through the edge effect. This gradual shift reflects the slow changes in climate, such as temperature and precipitation, as one moves across different latitudes or altitudes.

58. (1) Woody vines rooting in soil that climb trees to reach the canopy
Lianas are woody, climbing vines that are a prominent feature of tropical rainforests. They begin their life on the forest floor but quickly grow upward, using trees for physical support to reach the sunlight-rich canopy. Once established, they often loop between trees, providing pathways for arboreal animals. They are autotrophic and compete with trees for light, nutrients, and water.

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59. (4) To provide structural support in shallow, nutrient-poor soils
Buttress roots are large, wide roots that grow out from the base of many tall tropical rainforest trees. Their primary function is to provide structural stability and support for the massive trunks in the shallow, nutrient-poor soils of the rainforest. Because most nutrients are near the surface, these trees do not have deep taproots, making buttress roots essential for preventing toppling.

60. (2) Mahogany
India's tropical deciduous forests are dominated by commercially important species like teak, sal, and neem, which are well-adapted to the seasonal monsoon climate. Mahogany, however, is a tree species characteristic of tropical evergreen rainforests. It requires consistent high humidity and rainfall throughout the year, conditions that are not typical of the deciduous forest regions found across the Indian subcontinent.

61. (3) Venezuela and Brazil
The tropical savannas of South America are known by specific regional names. The Llanos are vast grasslands located in the Orinoco River basin of Venezuela and Colombia. The Campos refer to the tropical savanna regions found primarily in central and southern Brazil. Both areas experience distinct wet and dry seasons and support a variety of grasses and scattered tree species.

62. (4) Mediterranean Vegetation
Mediterranean vegetation is characterized by sclerophyllous plants, which have hard, leathery, and often small leaves. This adaptation is essential for surviving the hot, dry summers typical of the Mediterranean climate. The thick leaves reduce water loss through transpiration and help the plants endure long periods of drought. Examples include various species of evergreen oaks, shrubs, and aromatic herbs.

63. (1) The annual decay of extensive grass root systems and above-ground biomass
The high fertility and deep humus layer in temperate grassland soils result from the specific life cycle of grasses. Each year, a significant portion of the dense root systems and above-ground foliage dies and decomposes. This continuous addition of organic matter, combined with a climate that slows down decomposition slightly compared to the tropics, leads to the accumulation of nutrient-rich Mollisols.

64. (2) Soil : Extremely acidic and permanently frozen (permafrost)
Temperate deciduous forests are defined by their four distinct seasons and broad-leaved trees that shed leaves in winter. Their soils are generally fertile and well-developed, unlike the soils of the tundra which are permanently frozen. The process of leaf shedding, or abscission, is a vital adaptation that allows these trees to survive the cold winters when liquid water is unavailable.

65. (2) Temperate rainforests have seasonal variation; tropical rainforests stay warm
The most significant difference between temperate and tropical rainforests lies in their temperature patterns and seasonality. Tropical rainforests are warm and humid throughout the year without distinct seasons. In contrast, temperate rainforests experience cooler temperatures and significant seasonal variation, including cooler winters. Both receive high rainfall, but the cooler climate of temperate rainforests results in different dominant tree species and biodiversity.

66. (1) Low plant species diversity, often consisting of extensive tracts of conifer species
The boreal forest, or taiga, exhibits relatively low plant species diversity compared to other forest biomes. It is characterized by vast, uniform stands of coniferous trees like spruce, fir, and pine. The harsh climate, with long, cold winters and a short growing season, limits the number of species that can survive. This simplicity makes the biome highly vulnerable to specific pests.

67. (3) Epiphytic orchids
Tundra vegetation must survive extreme cold and very short growing seasons. Common plants include mosses, lichens, and dwarf shrubs that grow close to the ground for protection. Epiphytic orchids are not found in the tundra; they are characteristic of warm, humid tropical rainforests. The lack of tall trees and persistent freezing temperatures make the tundra environment unsuitable for such epiphytes.

68. (4) Completing a rapid life cycle quickly following rare rainfall events
Ephemerals are desert plants that survive by avoiding drought altogether. Their seeds can remain dormant in the soil for years until a rare rainfall event occurs. When it rains, these plants germinate, grow, flower, and produce new seeds in a very short period, often just a few weeks. This rapid life cycle ensures the next generation survives before the desert dries.

69. (3) Needle-like leaves
Mangroves utilize various adaptations for coastal life, including stilt roots for stability, pneumatophores for aeration, and viviparous germination. They often have thick, succulent leaves to store water and manage salt. Needle-like leaves are not an adaptation of mangroves; instead, they are characteristic of coniferous trees in cold boreal or alpine regions, where they help reduce water loss and manage snow.

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70. (2) Zooxanthellae are entirely responsible for secreting the calcium carbonate skeleton of the reef
The relationship between corals and zooxanthellae is a vital mutualistic symbiosis. The algae live within the coral's tissues, providing food through photosynthesis and assisting in waste removal. While they facilitate the calcification process, the coral polyps themselves are responsible for secreting the calcium carbonate that forms the reef structure. Without these algae, corals lose their primary energy source and perish.

71. (1) Both Statement I and Statement II are correct
The distribution of biomes on mountains mirrors their distribution across latitudes. As altitude increases, temperatures drop and environmental conditions change, similar to moving toward the poles. Consequently, a traveler ascending a tropical mountain may pass through rainforests, deciduous forests, coniferous forests, and finally reach alpine tundra at the peak. This vertical zonation is a fundamental concept in biogeography and ecology.

72. (1) A biome is a large area with multiple similar ecosystems defined by climate
Biomes and ecosystems are related but differ in scale. A biome is a large geographic area defined primarily by its climate and dominant vegetation types. Within a single biome, there can be many different ecosystems, which are smaller units where living organisms interact with each other and their specific physical environment. Thus, a biome serves as a broader category for similar ecosystems.

73. (3) Heavy rainfall leaches nutrients, leaving aluminum and iron oxides
Laterite soils in tropical rainforests are often poor for agriculture because high rainfall leaches away essential nutrients and silica. This leaves behind a soil rich in iron and aluminum oxides, which can harden into a brick-like substance when exposed to the sun after deforestation. This lack of nutrients and poor physical structure make it difficult to sustain crops without heavy fertilization.

74. (1) Tropical Deciduous Forests
Tropical deciduous forests are the most widespread forest type in India. They are characterized by trees like teak and sal, which are highly valued for their durable hardwood. These forests are adapted to the seasonal monsoon climate, shedding their leaves during the dry months. They play a significant role in the country's economy and provide critical habitat for diverse wildlife species.

75. (4) Savanna rainfall is higher and more distributed than in the rainforest biome
The tropical savanna biome is located in transitional zones between rainforests and deserts. It is characterized by a distinct dry season and a wet season. However, the annual rainfall in a savanna is significantly lower and less evenly distributed than in the tropical rainforest. This limited and seasonal water availability is what prevents the growth of dense forests and favors expansive grasslands.

76. (2) Viticulture
Viticulture is the specialized agricultural practice of cultivating grapes, particularly for wine production. This is a hallmark of Mediterranean agriculture, thriving in the region's climate of mild, wet winters and hot, dry summers. Other typical crops in these regions include olives, citrus fruits, and figs. The unique climatic conditions provide the perfect environment for these drought-resistant and sun-loving plant species.

77. (3) Nutrient-rich soils and flat topography suitable for mechanized farming
Temperate grasslands, like the North American prairies and Eurasian steppes, are ideal for cereal cultivation due to their highly fertile Mollisol soils. These soils are deep and rich in organic matter. Additionally, the flat or gently rolling topography of these regions facilitates large-scale, mechanized farming. The combination of soil quality and suitable terrain makes them the primary grain-producing regions of the world.

78. (4) Conifer needles releasing acidic compounds during slow decomposition
The soils of the boreal forest, known as podzols, are highly acidic primarily due to the nature of the vegetation. Conifer needles are rich in acidic compounds and decompose very slowly in the cold climate. As they break down, they release organic acids that leach through the soil,

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removing basic minerals and leaving behind an acidic, nutrient-poor, and often ash-grey horizon.

79. (1) Mojave Desert : North America
Deserts are found across all continents, each with unique characteristics. The Mojave Desert is a prominent arid region located in the Southwestern United States in North America. Other examples include the Atacama in South America, the Sahara and Kalahari in Africa, and the Great Victoria Desert in Australia. Each desert's location is determined by factors like atmospheric circulation and rain shadow effects.

80. (2) Climate change, ocean warming, and acidification
While localized issues like pollution and overfishing are significant, climate change represents the most widespread threat to coral reefs. Rising ocean temperatures lead to frequent and severe coral bleaching events. Furthermore, increased carbon dioxide absorption causes ocean acidification, which hinders the ability of corals to build their calcium carbonate skeletons. These global factors pose an existential threat to reef ecosystems worldwide.

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CHAPTER 04

World Agriculture : Types, Farming Systems and Major Crops

1. Which of the following best defines the primary distinction between subsistence agriculture and commercial agriculture?
(1) The intensive use of heavy machinery in subsistence agriculture versus manual labor in commercial agriculture.
(2) The proportion of produce consumed by the family versus the proportion produced specifically for sale.
(3) The cultivation of export-oriented cash crops exclusively within subsistence-based agricultural systems.
(4) The reliance on chemical fertilizers in subsistence farming and organic manure in commercial farming.
(5) Question not attempted

2. Match the local names of shifting cultivation in List I with their corresponding regions in List II.
List I: (Local Name)
A. Milpa
B. Ladang
C. Roca
D. Jhum
List II: (Region)
i. Brazil
ii. North-Eastern India
iii. Mexico and Central America
iv. Malaysia and Indonesia
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-ii, C-iv, D-i
(4) A-i, B-iv, C-iii, D-ii
(5) Question not attempted

3. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Intensive subsistence agriculture is characterized by high yield per unit area but low yield per labor.
Reason (R): The population density in regions practicing intensive subsistence agriculture is very high, leading to small landholdings and extensive use of manual labor.
In the light of the above statements, select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

4. Consider the following statements regarding Plantation agriculture:
I. It involves the cultivation of a single cash crop on a large scale.
II. It requires large capital investment and high managerial ability.
III. It is primarily practiced in the temperate regions of Europe and North America.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

5. Which of the following is a defining characteristic of mixed farming?
(1) The cultivation of multiple crops in the same field simultaneously without keeping livestock.
(2) Farming exclusively for the purpose of feeding dairy cattle.
(3) Equal emphasis is laid on crop cultivation and animal husbandry.
(4) The seasonal migration of farmers with their livestock to different altitudes.
(5) Question not attempted

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6. Which of the following regions is NOT prominently associated with commercial dairy farming?
(1) North-Western Europe
(2) Equatorial Amazon Basin
(3) Canada
(4) South-Eastern Australia
(5) Question not attempted

7. Mediterranean agriculture is highly specialized. Which of the following groups of crops is most representative of this farming system?
(1) Rubber, cocoa, and palm oil
(2) Jute, cotton, and sugarcane
(3) Wheat, maize, and sugar beet
(4) Olives, grapes, and citrus fruits
(5) Question not attempted

8. Consider the following statements regarding Dry land and Irrigated farming:
I. Dry land farming is practiced in regions receiving less than 75 cm of annual rainfall.
II. Drought-resistant crops like millets and gram are typical of dry land farming.
III. Irrigated farming often faces the ecological problem of soil salinization.
IV. Irrigated farming is completely independent of the nature of the soil.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

9. Read the following list of major rice-producing countries:
I. India
II. China
III. Indonesia
IV. Bangladesh
Which of the following represents the correct sequence of these countries arranged in descending order of their total production?
(1) II, I, IV, III
(2) I, II, III, IV
(3) II, I, III, IV
(4) I, III, II, IV
(5) Question not attempted

10. Read the following statements regarding wheat cultivation:
Statement I: Spring wheat is sown in spring and harvested in late summer or early autumn.
Statement II: Winter wheat is sown in autumn and remains dormant during the winter before being harvested in early summer.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

11. What is the primary reason maize is cultivated widely in both tropical and temperate zones?
(1) It requires a constant supply of standing water throughout its lifecycle to ensure global management.
(2) It guarantees a significantly higher market price than all other cereal crops grown in similar regions.
(3) It possesses a biological structure that naturally repels all known agricultural pests and diseases.
(4) It adapts well to varied climates and serves as human food, animal fodder, and industrial raw material.
(5) Question not attempted

12. Which of the following pairs regarding cotton cultivation is incorrectly matched?
(1) Origin - India
(2) Major producer - United Kingdom
(3) Soil association - Black soils (Regur) of the Deccan Plateau
(4) Climate requirement - 210 frost-free days
(5) Question not attempted

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13. Consider the following statements about Sugarcane and Sugar beet:
I. Sugarcane is a tropical and subtropical crop.
II. Sugar beet is a temperate crop.
III. Brazil is a leading producer of sugarcane.
IV. Sugar beet accounts for the majority of global sugar production.
V. Both crops require well-drained fertile soil

for optimal growth.

Which of the above statement(s) is/are incorrect?

(1) I and III only
(2) IV only
(3) II and V only
(4) III and IV only
(5) Question not attempted

14. Match the plantation crops in List I with their primary producing regions or characteristics in List II.

List I: (Crop)

A. Coffee
B. Tea
C. Cocoa
D. Rubber

List II: (Characteristic/Region)

i. Requires abundant rainfall evenly distributed throughout the year and is native to the Amazon basin.
ii. Grown on hill slopes in tropical and subtropical regions; major producers include India and China.
iii. Native to Ethiopian highlands; Brazil is the largest producer.
iv. Primarily grown in West Africa; used in chocolate production.

(1) A-iii, B-ii, C-iv, D-i
(2) A-ii, B-iii, C-i, D-iv
(3) A-iv, B-i, C-iii, D-ii
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

15. Which of the following is the odd one out based on the classification of major crops?

(1) Wheat
(2) Jute
(3) Cotton
(4) Rubber
(5) Question not attempted

16. In the context of global agriculture, primitive subsistence agriculture is best defined as a system where:

(1) Crops are grown mainly to be exported to neighboring countries.
(2) Farming relies primarily on traditional tools, family labor, and shifting fields to regain soil fertility.
(3) Farmers use high-yielding variety seeds and chemical fertilizers to maximize output.
(4) Large corporate farms manage the end-to-end production of a single cash crop.
(5) Question not attempted

17. Which of the following correctly describes a major environmental consequence of widespread shifting cultivation?

(1) Significant enhancement of long-term soil carbon storage.
(2) Deforestation and gradual loss of soil fertility in tropical regions.
(3) Reduction in atmospheric greenhouse gases due to continuous crop cover.
(4) Prevention of soil erosion on steep mountain slopes.
(5) Question not attempted

18. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):

Assertion (A): In intensive subsistence agriculture dominated by crops other than paddy, wheat and soybean are grown instead of rice.

Reason (R): Relief, climate, and soil conditions in regions like northern China and northwestern India do not support water-intensive rice cultivation.

In the light of the above statements, select the correct answer from the options given below:

(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

19. Consider the following statements regarding Plantation agriculture:

I. It was introduced mainly by Europeans in colonies situated in the tropics.
II. It promotes polyculture to ensure food security for local populations.
III. It is heavily dependent on scientific methods of farming and cheap labor.

Which of the above statement(s) is/are correct?

(1) I and II only
(2) I and III only
(3) II and III only
(4) I, II and III
(5) Question not attempted

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20. Which of the following is NOT a typical feature of mixed farming in Europe and North America?
(1) Crop rotation and intercropping play an important role in maintaining soil fertility.
(2) Heavy capital expenditure on farm machinery and buildings.
(3) Extensive use of chemical fertilizers and green manures.
(4) Farms are usually very small, averaging less than one hectare.
(5) Question not attempted

21. Which geographic factor is most critical in determining the location of commercial dairy farms?
(1) Availability of large tracts of barren land for grazing purposes.
(2) Proximity to industrial manufacturing zones for specialized labor supply.
(3) Proximity to urban centers providing a ready market for fresh milk.
(4) Location in tropical climates to ensure year-round high temperatures.
(5) Question not attempted

22. Match the regions in List I with their dominant agricultural system in List II.
List I: (Region)
A. Prairies of North America
B. Mediterranean coast of Europe
C. Amazon Basin
D. Monsoon Asia
List II: (System)
i. Primitive Subsistence (Shifting)
ii. Intensive Subsistence
iii. Commercial Grain Farming
iv. Viticulture and Orchard Farming
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-ii, C-iv, D-i
(5) Question not attempted

23. Consider the following statements regarding Dry land farming practices:
I. It involves deep ploughing and moisture conservation techniques.
II. It exclusively relies on groundwater extraction via tube wells.
III. It restricts the cultivation of crops that require high amounts of water.
IV. It is commonly practiced in the arid and semi-arid regions of Rajasthan.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

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24. Which of the following crops is considered a water-intensive crop primarily grown in the Kharif season in India?
(1) Rice
(2) Wheat
(3) Gram
(4) Mustard
(5) Question not attempted

25. Which of the following represents the correct sequence of major wheat-producing countries arranged in descending order of their total production volume?
(1) China, India, Russia, USA
(2) India, China, USA, Russia
(3) USA, China, India, Russia
(4) Russia, USA, China, India
(5) Question not attempted

26. Which of the following pairs concerning the utilization of maize is correctly matched?
(1) Biofuel production - Ethanol derived from maize
(2) Fodder - Cultivated purely for silk extraction
(3) Staple food - Exclusively eaten in Scandinavian countries
(4) Industrial use - Manufacturing of synthetic rubber
(5) Question not attempted

27. Consider the following statements regarding Cotton cultivation:
I. It requires high temperature and light rainfall or irrigation.
II. It requires 210 frost-free days and bright sunshine for its growth.
III. It is a Kharif crop in India.
IV. It is heavily cultivated in the podzol soils of the Taiga region.
V. China and India are among the top producers globally.
Which of the above statement(s) is/are incorrect?

(1) IV only
(2) I and III only
(3) II and V only
(4) III and IV only
(5) Question not attempted

28. Given below are two statements regarding Sugar beet:
Statement I: Sugar beet requires a temperate climate with moderate rainfall and cool temperatures for optimal sucrose accumulation.
Statement II: Sugar beet can only be cultivated in water-logged soils of the equatorial region.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

29. What is the primary reason that coffee plantations often intersperse coffee plants with taller shade trees?
(1) To increase the overall timber output of the managed plantation area.
(2) To prevent the spread of root diseases among sensitive coffee plants.
(3) To protect coffee plants from direct sunlight and extreme temperature variations.
(4) To facilitate the use of heavy harvesting machinery during the peak season.
(5) Question not attempted

30. Match the industrial crops in List I with their most suitable climatic requirements in List II.
List I: (Crop)
A. Natural Rubber
B. Jute
C. Cotton
D. Sugarcane
List II: (Requirement)
i. Tropical climate with well-drained fertile soil; long growing season.
ii. High temperature, heavy rainfall, and humid climate; grows best on flood plains.
iii. Equatorial climate with heavy rainfall above 200 cm throughout the year.
iv. High temperature, light rainfall, 210 frost-free days.
(1) A-iii, B-ii, C-iv, D-i
(2) A-ii, B-iii, C-i, D-iv
(3) A-iii, B-iv, C-ii, D-i
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

31. Which of the following best describes the core objective of the 'Ladang' agricultural system practiced in Southeast Asia?
(1) It is a shifting cultivation system based on clearing forest patches for short-term agricultural use.
(2) It is a commercial farming system primarily aimed at exporting rice to international global markets.
(3) It is a specialized high-tech hydroponic farming system utilized in major modern urban centers.
(4) It is a state-sponsored cooperative dairy farming system providing fresh milk to regional populations.
(5) Question not attempted

32. All of the following are examples of intensive subsistence agriculture EXCEPT:
(1) Cultivation of wet paddy in the river valleys of Southeast Asia.
(2) Large-scale mechanized cultivation of wheat in the Canadian Prairies.
(3) Cultivation of wheat and millets in the drier parts of the Indo-Gangetic plains.
(4) Intensive cultivation of vegetables near highly populated Asian urban centers.
(5) Question not attempted

33. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): The yield per acre in intensive subsistence farming is relatively high.
Reason (R): Farmers use every bit of available land and often practice multiple cropping due to high population pressure.
In the light of the above statements, select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.

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(4) A is false but R is true.
(5) Question not attempted

34. Consider the following statements regarding mixed farming:
I. It is commonly found in the highly developed parts of the world, e.g., North-western Europe and Eastern North America.
II. Fodder crops like alfalfa and clover are an important component of this system.
III. It strictly avoids the rearing of animals like cattle, sheep, and pigs.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

35. Match the agricultural practices in List I with their defining characteristics in List II.
List I: (Practice)
A. Dairy Farming
B. Mediterranean Agriculture
C. Shifting Cultivation
D. Commercial Grain Farming
List II: (Characteristic)
i. Highly mechanized, large farms, low yield per acre but high yield per person.
ii. Capital intensive, focused on milch animals, labor intensive throughout the year.
iii. Slash and burn technique, low technological input.
iv. Specialized in orchard farming, viticulture, tolerant of summer droughts.
(1) A-ii, B-iv, C-iii, D-i
(2) A-iv, B-ii, C-i, D-iii
(3) A-ii, B-i, C-iv, D-iii
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

36. Consider the following statements about dairy farming:
I. It is highly capital intensive due to requirements for animal sheds, storage facilities, and milking machines.
II. It requires intensive labor for feeding and milking, with little or no off-season during the year.
III. The development of transportation and refrigeration has expanded its market reach.
IV. It is the dominant form of agriculture in the arid deserts of the Middle East.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) IV only
(3) III and IV only
(4) II only
(5) Question not attempted

37. Which of the following is the most appropriate description of Mediterranean agriculture?
(1) It is a subsistence farming system found mainly in the interior parts of continents.
(2) It is solely dependent on shifting cultivation and the rearing of reindeer.
(3) It is a specialized commercial system focused on citrus, grapes, and olives.
(4) It is characterized by vast mono-crop plantations of rubber and tea for global trade.
(5) Question not attempted

38. Consider the following statements regarding farming systems based on moisture availability:
I. Dry land farming emphasizes techniques to conserve soil moisture, such as mulching.
II. Irrigated farming ensures multiple cropping in areas that would otherwise remain barren due to lack of rainfall.
III. Dry land farming predominantly cultivates water-intensive crops like sugarcane.
IV. The Indira Gandhi Canal has facilitated irrigated farming in north-western Rajasthan.
Which of the above statement(s) is/are correct?
(1) I, II and IV only
(2) II, III and IV only
(3) I and III only
(4) I, II, III and IV
(5) Question not attempted

39. Which of the following physical requirements is essential for the successful cultivation of wet paddy?
(1) Well-drained sandy soil that does not retain moisture for extended periods of time.
(2) Cool summers with temperatures strictly maintained below 15 degrees Celsius.
(3) A frost-free period of exactly 100 days with no requirement for standing water.
(4) High temperatures above 25°C, high

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humidity, and annual rainfall exceeding 100 cm.
(5) Question not attempted

40. Consider the following statements regarding the geographical distribution of wheat:
I. Wheat is primarily a crop of the mid-latitude grasslands.
II. The Steppes of Eurasia and Prairies of North America are major wheat belts.
III. Wheat cultivation requires a heavy rainfall of over 200 cm annually.
IV. Punjab and Haryana are major wheat-producing states in India.
V. It thrives best in well-drained loamy and clayey soils.
Which of the above statement(s) is/are correct?
(1) I, II, IV and V only
(2) I, III and IV only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

41. In the United States, maize (corn) is primarily utilized for which of the following purposes?
(1) Exported entirely as a cash crop to Asia.
(2) Processed almost exclusively for direct human consumption as a staple food.
(3) Used as livestock feed to support the meat and dairy industries.
(4) Ploughed back into the soil as green manure.
(5) Question not attempted

42. Read the following stages of cotton production and processing:
I. Spinning into yarn
II. Harvesting of bolls
III. Ginning (separating seeds from fiber)
IV. Weaving into fabric
Which of the following represents the correct chronological order of these stages?
(1) II, III, I, IV
(2) III, II, IV, I
(3) II, I, III, IV
(4) I, III, II, IV
(5) Question not attempted

43. Match the crops in List I with their characteristic features in List II.
List I: (Crop)
A. Sugarcane
B. Tea
C. Jute
D. Maize
List II: (Feature)
i. Known as the 'Golden Fibre'; requires well-drained fertile soils in the flood plains.
ii. Often used as both food and fodder; originated in the Americas.
iii. A tropical grass that takes almost a year to mature and exhausts soil fertility rapidly.
iv. Requires a warm and moist frost-free climate all year; frequent showers promote tender leaf growth.
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

44. Which of the following pairs concerning the physical requirements of crops is incorrectly matched?
(1) Wheat - Cool growing season and bright sunshine at the time of ripening.
(2) Cotton - High rainfall of 250 cm and continuous cloudy days.
(3) Rice - High temperature and high humidity throughout the growing season.
(4) Jute - High temperature and heavy rainfall during growth.
(5) Question not attempted

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45. What is the primary purpose of 'retting' in the production of jute?
(1) To increase the overall nutritional value of harvested jute seeds.
(2) To bleach the jute fabric for high-quality commercial textile dyeing.
(3) To separate fibers from the stem by soaking bundles in water.
(4) To protect the growing jute plant from regional pest infestations.
(5) Question not attempted

46. Match the farming systems in List I with their distinguishing features in List II.
List I: (Farming System)
A. Commercial Grain Farming
B. Plantation Agriculture
C. Intensive Subsistence (Rice-based)
D. Mixed Farming

List II: (Feature)
i. High population density, very small farm size, dominance of manual labor.
ii. Vast landholdings, highly mechanized, low yield per acre.
iii. Integration of crop cultivation and livestock rearing.
iv. Large estates, single cash crop, heavily reliant on export markets.
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-i, B-iii, C-ii, D-iv
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

47. Given below are two statements regarding shifting cultivation:
Statement I: Shifting cultivation is highly sustainable in the modern era due to its minimal use of synthetic chemicals.
Statement II: Shifting cultivation contributes to deforestation and soil erosion when the fallow periods are drastically shortened due to population pressure.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

48. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Mixed farming systems are highly resilient to market fluctuations compared to monoculture systems.
Reason (R): In mixed farming, if a crop fails or crop prices drop, the farmer can still rely on income from livestock and animal products.
In the light of the above statements, select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

49. Consider the following statements about global agricultural regions:
I. Dairy farming is prominent in New Zealand.
II. The Pampas of Argentina are famous for commercial grain farming and extensive livestock rearing.
III. The Mediterranean region is a major global supplier of citrus fruits and wines.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

50. Which of the following is NOT an attribute of intensive subsistence farming?
(1) Cultivation of large, consolidated landholdings using heavy machinery.
(2) High use of farmyard manure to maintain soil fertility.
(3) High output per hectare of land.
(4) Maximum utilization of available land, leaving almost no area uncultivated.
(5) Question not attempted

51. Consider the following statements regarding plantation crops:
I. Tea plantations require well-drained soil to prevent waterlogging around the roots.
II. Rubber is gathered from the latex of trees grown primarily in equatorial climates.
III. Cocoa is a major plantation crop in the West African countries like Côte d'Ivoire and Ghana.
IV. Sugarcane plantations are predominantly found in temperate zones with freezing winters.
Which of the above statement(s) is/are incorrect?
(1) IV only
(2) I and II only
(3) III and IV only
(4) II only
(5) Question not attempted

52. How does the climatic pattern of the Mediterranean region specifically benefit the cultivation of grapes and olives?
(1) The continuous heavy rains in summer

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promote vegetative growth for vines.
(2) The freezing winter temperatures act as a natural pest control mechanism.
(3) The high humidity throughout the year prevents the fruits from cracking.
(4) Dry summers and mild, rainy winters allow drought-tolerant crops to mature.
(5) Question not attempted

53. Consider the following statements about irrigated farming:
I. It has significantly increased agricultural productivity in arid and semi-arid regions.
II. Over-irrigation without proper drainage leads to waterlogging.
III. Canal irrigation can cause an increase in soil salinity through capillary action.
IV. Irrigated farming is solely restricted to the cultivation of cash crops.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

54. Consider the following statements regarding Rice cultivation:
I. 'Aus', 'Aman', and 'Boro' are three distinct crops of rice grown in a single year in states like West Bengal and Assam.
II. Transplantation is the most common method of rice cultivation in Asian intensive subsistence systems.
III. Upland rice requires standing water throughout its entire life cycle.
IV. China is the leading producer of rice in the world.
V. Rice cultivation is a major anthropogenic source of atmospheric methane.
Which of the above statement(s) is/are correct?
(1) I, II, IV and V only
(2) I, II, III and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

55. Match the type of wheat in List I with its primary characteristic or region in List II.
List I: (Wheat Type)
A. Spring Wheat
B. Winter Wheat
C. Macaroni (Durum) Wheat
D. Soft Wheat
List II: (Characteristic/Region)
i. Sown in autumn, survives winter under snow cover, common in milder temperate zones.
ii. Hard wheat with high protein content, primarily used for making pasta.
iii. Sown in spring in regions with severe winters (e.g., Canadian Prairies).
iv. Lower protein content, ideal for making cakes and pastries.
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

56. Which of the following sequences represents the correct progression of climatic requirements from germination to maturation for wheat?
(1) High temperature and heavy rain → Cool and moist → Hot and dry
(2) Cool and moist → Moderate temperature and light rain → Warm and sunny
(3) Hot and dry → Heavy rainfall → Freezing temperatures
(4) Warm and sunny → Cool and moist → Continuous heavy rain
(5) Question not attempted

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57. Which of the following is the most appropriate reason for cotton being largely grown in the northwestern parts of the Deccan Plateau in India?
(1) The region experiences heavy monsoonal downpours exceeding 300 cm annually.
(2) The region is completely free from insect pests like the common bollworm.
(3) Black soil (Regur) is moisture-retentive, which is ideal during dry spells.
(4) Cotton can only be cultivated at high altitudes above 2000 meters in elevation.
(5) Question not attempted

58. Consider the following statements regarding the extraction of sugar:
I. Sugarcane must be crushed within a short time after harvesting to prevent a drop in sucrose content.

II. Sugar beet can be stored for longer periods than sugarcane without significant loss of sugar content.
III. Cuba is historically known as the 'Sugar Bowl of the World' due to its sugarcane industry.
IV. Sugarcane juice extraction is completely mechanized worldwide with no manual labor involved.
V. Bagasse is a byproduct of sugarcane crushing used for fuel or paper making.

Which of the above statement(s) is/are incorrect?
(1) IV only
(2) II and III only
(3) I and V only
(4) IV and V only
(5) Question not attempted

59. Which of the following statements correctly distinguishes Arabica coffee from Robusta coffee?
(1) Robusta is primarily grown at much higher altitudes than the Arabica variety.
(2) Arabica contains significantly higher caffeine content than the Robusta bean.
(3) Robusta is exclusively grown in temperate climates while Arabica is equatorial.
(4) Arabica is considered to have a superior flavor and higher market price.
(5) Question not attempted

60. Which of the following is NOT a consequence of the invention and widespread use of synthetic rubber?
(1) A decline in the absolute monopoly of natural rubber in industrial manufacturing.
(2) The complete eradication and abandonment of all natural rubber plantations in Southeast Asia.
(3) Increased competition for natural rubber producers like Thailand, Indonesia, and Malaysia.
(4) Stabilization of global rubber prices during times of natural rubber supply shortages.
(5) Question not attempted

61. Which of the following statements about commercial agriculture is incorrect?
(1) It operates on a large scale primarily for profit.
(2) It generally employs modern scientific methods and advanced technology.
(3) It relies almost entirely on traditional farming knowledge and local seed varieties.
(4) It encompasses practices like commercial grain farming and plantation agriculture.
(5) Question not attempted

62. The practice of shifting cultivation is known by different names globally. In which of the following countries is it known as 'Roca'?
(1) Indonesia
(2) Vietnam
(3) Mexico
(4) Brazil
(5) Question not attempted

63. A farmer in a densely populated region of South Asia grows rice during the monsoon and a quick-maturing vegetable crop in the dry season on a small plot of land, using extensive family labor. This scenario is a practical application of which farming system?
(1) Intensive subsistence agriculture
(2) Extensive commercial grain farming
(3) Nomadic herding
(4) Mediterranean agriculture
(5) Question not attempted

64. Which of the following pairs of plantation crops and their major producing countries is correctly matched?
(1) Natural Rubber - Canada
(2) Cocoa - Ghana
(3) Tea - Brazil
(4) Coffee - United Kingdom
(5) Question not attempted

65. In the context of mixed farming, what is the significance of cultivating root crops like turnips and potatoes alongside cereals?
(1) They completely replace cereals as the primary human food source in mixed farming.
(2) They act as fodder for livestock and assist in crop rotation to maintain soil fertility.
(3) They are the only crops that can withstand the heavy application of chemical fertilizers.
(4) They reduce the need for agricultural labor to zero.
(5) Question not attempted

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66. Identify the odd one out among the following regions, considering their suitability and prominence for commercial dairy farming:
(1) Sahara Desert
(2) North-Western Europe
(3) South-Eastern Australia
(4) New Zealand
(5) Question not attempted

67. Read the following statements regarding the Mediterranean agricultural region:
Statement I: It is renowned as the 'Orchard Lands of the World' due to extensive fruit cultivation.
Statement II: Viticulture (grape cultivation) is a specialized and traditional feature of this region, producing high-quality wines.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

68. Which of the following is an exception to the general characteristics of dry land farming?
(1) Use of drought-resistant seed varieties.
(2) Practice of keeping the land fallow to preserve moisture.
(3) Maintenance of soil surface mulch to reduce evaporation.
(4) Cultivation of water-intensive crops like jute and wet paddy.
(5) Question not attempted

69. 'Aus', 'Aman', and 'Boro' are terms related to the cultivation of which of the following major crops?
(1) Wheat
(2) Maize
(3) Rice
(4) Sugarcane
(5) Question not attempted

70. What is the primary cause for the large-scale mechanized cultivation of wheat in regions like the Canadian Prairies and the Pampas of Argentina?
(1) The presence of exceptionally high population density providing cheap manual labor for extensive planting.
(2) Vast, flat grasslands and low population density allow efficient machinery use.
(3) The specific soil composition being entirely unsuitable for any other type of agricultural or grazing activity.
(4) The year-round equatorial climate that allows for continuous sowing and harvesting cycles throughout the year.
(5) Question not attempted

71. Which of the following statements correctly identifies the geographical origin of Maize?
(1) It is an indigenous crop variety originating from the tropical regions of the Indian subcontinent.
(2) It first emerged and was cultivated in the temperate grasslands of the Eurasian continental interior.
(3) It was first domesticated by early civilizations residing along the banks of the Nile River Valley.
(4) It is native to the Americas and was later introduced to global markets by European explorers.
(5) Question not attempted

72. If a farmer wants to cultivate cotton successfully, which of the following combinations of environmental conditions should they seek?
(1) Well-drained black clayey soil, ample sunshine, and a long frost-free period.
(2) Peat soil, continuous rainfall, and freezing temperatures.
(3) Sandy desert soil, highly saline water, and complete shade.
(4) Laterite soil, sloping terrain, and daily evening thunderstorms.
(5) Question not attempted

73. Which of the following pairs of sugar-producing crops and their climatic preference is incorrectly matched?
(1) Sugarcane - Tropical and subtropical climates
(2) Sugar beet - Cool temperate climates
(3) Sugarcane - Frost-prone continental

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climates
(4) Sugar beet - Requires moderate rainfall and cool autumns for harvesting
(5) Question not attempted

74. Given below are two statements regarding tea cultivation:
Statement I: Tea bushes require an acidic, well-drained soil and high rainfall evenly distributed throughout the year.
Statement II: Stagnant water around the roots of the tea plant is highly beneficial for the growth of tender leaves.
Which of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

75. Which of the following statements about the distribution and production of Jute is incorrect?
(1) Jute thrives in the fertile alluvium of river floodplains where soils are renewed annually.
(2) The Ganges-Brahmaputra delta in India and Bangladesh is the world's leading jute-producing region.
(3) It is a labor-intensive crop, requiring significant manpower for harvesting and retting.
(4) Jute requires a cool and dry climate during its primary growth phase.
(5) Question not attempted

76. Which of the following farming systems is the odd one out in terms of its primary reliance on chemical fertilizers and advanced mechanization?
(1) Commercial grain farming in the Prairies
(2) Primitive subsistence (Shifting cultivation)
(3) Extensive commercial dairy farming in New Zealand
(4) Large-scale mixed farming in Western Europe
(5) Question not attempted

77. Regarding plantation agriculture, which of the following is NOT typically considered a plantation crop?
(1) Rubber
(2) Coffee
(3) Wheat
(4) Sugarcane
(5) Question not attempted

78. What is the main effect of inadequate drainage in heavily irrigated farming regions, such as parts of the Indira Gandhi Canal command area in Rajasthan?
(1) Rapid increase in soil fertility and organic carbon.
(2) Complete elimination of all agricultural pests.
(3) Drastic drop in the regional water table.
(4) Waterlogging and secondary salinization of the soil.
(5) Question not attempted

79. Which cereal crop ranks first in the world in terms of total geographical area under cultivation and acts as a staple food for a large portion of the global population, especially in temperate zones?
(1) Wheat
(2) Rice
(3) Barley
(4) Oats
(5) Question not attempted

80. Which of the following agricultural practices is the most appropriate and sustainable approach for maintaining soil fertility in mixed farming systems?
(1) Continuous monoculture of high-yielding wheat varieties.
(2) Crop rotation incorporating leguminous fodder crops like clover or alfalfa.
(3) Complete reliance on synthetic nitrogenous fertilizers.
(4) Practicing slash-and-burn clearing every three years.
(5) Question not attempted

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ANSWERS

1. (2) The proportion of produce consumed by the family versus the proportion produced specifically for sale.
Subsistence agriculture focuses on providing food for the farmer's family with little surplus for sale. In contrast, commercial agriculture is market-oriented, prioritizing profit through large-scale production. The scale of operation and use of technology often differ, but the fundamental distinction lies in the intended destination and purpose of the harvested produce.

2. (1) A-iii, B-iv, C-i, D-ii
Shifting cultivation is known by various regional names globally. Milpa is used in Mexico and Central America, while Ladang is the term in Malaysia and Indonesia. In Brazil, this practice is called Roca. Jhum is the traditional name for shifting cultivation in North-Eastern India, highlighting the widespread nature of this traditional method.

3. (1) Both A and R are true and R is the correct explanation of A.
High population density in subsistence farming regions forces farmers to maximize output from small landholdings. This results in high yields per unit of land through intensive manual labor. However, because the labor force is so large relative to the output, the productivity per worker remains low. The land pressure dictates these labor-intensive agricultural practices.

4. (1) I and II only
Plantation agriculture is a specialized commercial system focusing on a single cash crop for export. It requires significant capital investment, advanced managerial skills, and scientific methods. These farms are typically large estates established in tropical and subtropical regions. Unlike temperate farming, plantations were historically developed by colonial powers to supply global markets.

5. (3) Equal emphasis is laid on crop cultivation and animal husbandry.
Mixed farming integrates crop production with animal rearing on the same farm. Farmers grow crops for human consumption and fodder for livestock, ensuring a balanced agricultural system. This approach provides multiple income streams and maintains soil fertility through animal manure and crop rotation. It is a highly efficient system common in developed regions like Europe.

6. (2) Equatorial Amazon Basin
Commercial dairy farming requires specialized infrastructure, cool climates for temperate cattle breeds, and proximity to large urban markets. The Equatorial Amazon Basin has high heat and humidity, which are unsuitable for large-scale dairy production. North-Western Europe, Canada, and South-Eastern Australia are leading regions due to favorable climates and advanced refrigeration and transportation networks.

7. (4) Olives, grapes, and citrus fruits
Mediterranean agriculture is uniquely adapted to dry summers and mild, wet winters. This specialized system focuses on viticulture, orchards, and high-value crops. Grapes are grown for wine production, while olives and citrus fruits thrive in these specific climatic conditions. The region serves as a major global supplier of these products due to its favorable environmental factors.

8. (1) I, II and III only
Dry land farming occurs in low-rainfall areas, focusing on moisture conservation and drought-resistant crops like millets. Irrigated farming provides reliable water but can lead to soil salinization through poor drainage and evaporation. While irrigation reduces weather dependency, soil characteristics still significantly influence crop selection and drainage requirements, making soil type a critical factor.

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9. (1) II, I, IV, III
China consistently ranks as the largest producer of rice globally, followed closely by India. Together, these two nations account for a significant portion of the world's total output. Bangladesh and Indonesia are also among the top producers due to their favorable monsoonal climates and high population demands. Production levels fluctuate annually based on weather and technology.

10. (1) Both Statement I and Statement II are correct.
Spring wheat is planted in early spring when the ground thaws and is harvested by late summer. It is common in regions with extremely harsh winters. Winter wheat is sown in autumn, stays dormant under snow during winter, and resumes growth in spring for an early summer harvest. Both methods allow wheat production across diverse climatic zones.

11. (4) It adapts well to varied climates and serves as human food, animal fodder, and industrial raw material.
Maize is highly versatile, thriving in varied climatic conditions ranging from tropical to temperate zones. It serves multiple roles as a staple food for humans, high-energy fodder for livestock, and a raw material for industrial products like starch and biofuel. This adaptability and multi-purpose utility make it one of the most widely cultivated cereals globally.

12. (2) Major producer - United Kingdom
Cotton requires a warm climate with a long frost-free period and bright sunshine, conditions not found in the United Kingdom. It is traditionally associated with fertile black soils like those on India's Deccan Plateau. While India is a major producer and the crop's historical origin, the UK lacks the necessary environmental factors to sustain commercial cotton cultivation.

13. (2) IV only
Sugarcane is a tropical plant providing approximately eighty percent of the world's sugar supply. Sugar beet is a temperate crop and accounts for a much smaller portion of global production. Both crops require specific fertile soils for growth. Brazil remains the top sugarcane producer, while sugar beet is primarily grown in cooler regions like Europe.

14. (1) A-iii, B-ii, C-iv, D-i
Coffee is native to the Ethiopian highlands, with Brazil as its largest producer. Tea thrives on tropical and subtropical hill slopes, especially in India and China. Cocoa is extensively grown in West Africa for the chocolate industry. Natural rubber, native to the Amazon, requires high year-round rainfall and is now predominantly produced in Southeast Asian countries.

15. (1) Wheat
Wheat is categorized as a cereal or food crop, forming a staple part of human diets globally. In contrast, jute and cotton are fiber crops used in the textile industry, and rubber is an industrial plantation crop. This distinction separates wheat from the others, which are primarily cultivated for their industrial applications rather than direct human consumption.

16. (2) Farming relies primarily on traditional tools, family labor, and shifting fields to regain soil fertility.
Primitive subsistence agriculture involves small-scale farming where the primary goal is meeting the immediate food needs of the household. Farmers use traditional tools and family labor without modern inputs. A key feature is shifting cultivation, where fields are temporarily farmed and then left fallow for several years to allow the soil to regain natural fertility.

17. (2) Deforestation and gradual loss of soil fertility in tropical regions.
Shifting cultivation involves clearing forest patches through slashing and burning. While sustainable at low population densities, increased pressure leads to shorter fallow periods. This prevents the soil from regenerating, causing a gradual decline in fertility and permanent deforestation. The loss of tree cover also increases vulnerability to soil erosion, negatively impacting the long-term ecological balance.

18. (1) Both A and R are true and R is the correct explanation of A.
In regions where rainfall is insufficient or the terrain is unsuitable for flooding fields, rice cannot be grown. Therefore, intensive subsistence farmers switch to drought-tolerant or less water-demanding crops like wheat and soybean. Northern China and parts of India illustrate this

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transition, where climatic constraints dictate the cultivation of alternative staple crops instead of water-intensive systems.

19. (2) I and III only
European colonial powers introduced plantation agriculture in tropical colonies to produce high-value crops for export. This system is characterized by large estates focusing on a single crop, known as monoculture, rather than diverse polyculture. It relies heavily on scientific management, significant capital investment, and a large supply of inexpensive labor to ensure the efficient production of commodities.

20. (4) Farms are usually very small, averaging less than one hectare.
Mixed farming is typically practiced on medium-sized farms in developed regions like Europe and North America, not on tiny plots. The system is capital-intensive, requiring investments in machinery and infrastructure. It emphasizes soil health through crop rotation, green manures, and chemical fertilizers. The integration of livestock and crops provides a diverse economic base for farmers.

21. (3) Proximity to urban centers providing a ready market for fresh milk.
Milk and dairy products are highly perishable, necessitating quick transportation to consumers. Consequently, commercial dairy farms are strategically located near urban and industrial centers to ensure a ready market and minimize spoilage. Advancements in refrigeration and pasteurization have expanded the range, but being close to densely populated areas remains the most critical factor for economic viability.

22. (1) A-iii, B-iv, C-i, D-ii
The North American Prairies are famous for extensive commercial grain farming. Mediterranean Europe specializes in viticulture and orchard farming. The Amazon Basin is a traditional area for primitive subsistence or shifting cultivation practiced by indigenous communities. Monsoon Asia is characterized by intensive subsistence agriculture, where high population density requires maximizing food production from small plots of land.

23. (3) I, III and IV only
Dry land farming utilizes specific techniques like deep ploughing and mulching to conserve limited soil moisture. It focuses on crops that require minimal water and is prevalent in arid regions such as Rajasthan. Unlike irrigated farming, it does not rely on consistent groundwater extraction via tube wells. Instead, it adapts agricultural practices to the natural rainfall constraints.

24. (1) Rice
Rice is a water-intensive crop that requires high temperatures and heavy rainfall or irrigation for successful growth. In India, it is primarily grown during the Kharif season, coinciding with the Southwest Monsoon. The crop typically needs standing water in the fields during its early stages. This differentiates it from Rabi crops like wheat, which grow in drier conditions.

25. (1) China, India, Russia, USA
China is the world's leading producer of wheat, followed by India, as both nations have vast agricultural land and high domestic demand. Russia and the United States also rank among the top global producers, often exporting significant surpluses to international markets. These four countries dominate global wheat production, though rankings can shift slightly depending on annual weather patterns.

26. (1) Biofuel production - Ethanol derived from maize
Maize is a significant source for biofuel production, particularly ethanol, which is used as an alternative or additive to gasoline. While it is a staple food in many cultures and an essential fodder for livestock, its use for silk extraction or synthetic rubber is not standard. In developed economies, a large portion of maize is processed for energy.

27. (1) IV only
Cotton is a tropical and subtropical crop that requires high temperatures, bright sunshine, and a long frost-free period. It is entirely unsuitable for the cold Taiga regions or acidic podzol soils found in high-latitude forests. Major producers like China and India cultivate cotton in warmer climates and moisture-retentive soils, such as the black soils of the Deccan Plateau.

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28. (3) Statement I is correct but Statement II is incorrect.
Sugar beet is a temperate crop that thrives in cool climates with moderate rainfall, which promotes the accumulation of sucrose in its roots. It is not grown in equatorial regions or water-logged soils, as these conditions are unsuitable for its development. Instead, it is a major source of sugar in Europe and North America, complementing tropical sugarcane production.

29. (3) To protect coffee plants from direct sunlight and extreme temperature variations.
Coffee plants are sensitive to direct, intense sunlight and extreme fluctuations in temperature. Taller shade trees are interspersed within plantations to create a microclimate that provides filtered light and maintains more stable temperatures. This practice protects the delicate coffee bushes, enhances bean quality, and helps retain soil moisture. It is an effective method used in many tropical regions worldwide.

30. (1) A-iii, B-ii, C-iv, D-i
Natural rubber requires an equatorial climate with very high rainfall. Jute thrives in hot, humid conditions on fertile floodplains. Cotton needs high temperatures and a specific frost-free period with light rainfall. Sugarcane is a tropical grass requiring a long growing season and well-drained fertile soil. Each crop has distinct environmental requirements that determine its geographical distribution and commercial success.

31. (1) It is a shifting cultivation system based on clearing forest patches for short-term agricultural use.
Ladang is the regional term for shifting cultivation practiced in Southeast Asia, particularly in Indonesia and Malaysia. The system involves clearing small patches of forest, burning the vegetation to enrich the soil with ash, and growing crops for a few years. Once the soil fertility declines, the plot is abandoned for a new site, allowing for forest regeneration.

32. (2) Large-scale mechanized cultivation of wheat in the Canadian Prairies.
Intensive subsistence agriculture is defined by high labor input on small plots in densely populated regions, such as wet paddy cultivation in Asia. In contrast, wheat farming in the Canadian Prairies is a form of extensive commercial grain farming. This system uses vast landholdings and heavy mechanization with minimal labor per acre, focusing on large-scale production for export.

33. (1) Both A and R are true and R is the correct explanation of A.
Due to severe population pressure and limited land availability, farmers in intensive subsistence systems utilize every available space. They practice multiple cropping and apply significant manual labor and organic manures to maximize the harvest from small plots. This intense use of resources results in a high yield per unit of land, even though total output per laborer remains low.

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34. (1) I and II only
Mixed farming is a sophisticated system prevalent in developed regions like Western Europe and North America. It involves a balanced integration of crop cultivation and livestock rearing. Fodder crops such as alfalfa and clover are essential, as they provide nutrition for animals and help fix nitrogen in the soil. The inclusion of cattle and sheep is a defining characteristic.

35. (1) A-ii, B-iv, C-iii, D-i
Dairy farming is capital and labor-intensive, focusing on milch animals year-round. Mediterranean agriculture is known for specialized viticulture and orchard farming adapted to dry summers. Shifting cultivation uses the slash-and-burn technique with low technological input. Commercial grain farming is highly mechanized on large farms, resulting in high yield per person despite lower yield per acre than intensive systems.

36. (2) IV only
Dairy farming is not a dominant agricultural practice in arid deserts due to the lack of fresh fodder and water. It is a highly capital-intensive industry requiring modern sheds, machinery, and cooling systems. The development of transportation and refrigeration has significantly expanded its reach to global markets. Most commercial operations are located in temperate regions near urban centers.

37. (3) It is a specialized commercial system focused on citrus, grapes, and olives.
Mediterranean agriculture is a highly specialized commercial system found in regions with a Mediterranean climate. It focuses on the production of high-value crops such as citrus fruits, olives, and grapes. Viticulture, or grape cultivation, is a hallmark of this system, often supporting a significant wine industry. The system is well-adapted to the unique seasonal rhythm of dry summers.

38. (1) I, II and IV only
Dry land farming focuses on moisture conservation techniques like mulching and cultivating drought-resistant crops. Irrigated farming allows for multiple crops in arid regions by providing a stable water supply. The Indira Gandhi Canal is a prime example of irrigation transforming desert landscapes in Rajasthan. Water-intensive crops like sugarcane are unsuitable for dry land farming and require reliable irrigation to thrive.

39. (4) High temperatures above 25°C, high humidity, and annual rainfall exceeding 100 cm.
Wet paddy cultivation requires specific environmental conditions, including high temperatures above twenty-five degrees Celsius and high humidity. The crop needs significant water, typically requiring an annual rainfall of over one hundred centimeters or reliable irrigation. Fields must be flooded during the early growth stages, making soil that retains moisture, such as clayey alluvium, much more suitable for this purpose.

40. (1) I, II, IV and V only
Wheat is a staple crop primarily grown in mid-latitude grasslands, including the Eurasian Steppes and North American Prairies. In India, Punjab and Haryana are major producers. The crop thrives in well-drained loamy soils and requires a cool growing season followed by bright sunshine. Contrary to water-intensive crops, wheat does not need heavy rainfall and grows best with moderate moisture.

41. (3) Used as livestock feed to support the meat and dairy industries.
In the United States, the vast majority of maize, commonly known as corn, is utilized as livestock feed to support the massive meat and dairy industries. It is a high-energy source for cattle, hogs, and poultry. While some corn is used for human consumption and industrial products like ethanol, its primary economic role is supporting the animal agriculture sector.

42. (1) II, III, I, IV
The production of cotton fabric follows a specific sequence. First, the mature cotton bolls are harvested from the fields. Next, ginning occurs to separate the seeds from the cotton fibers. These fibers are then spun into yarn through various mechanical processes. Finally, the yarn is woven into fabric on looms. This progression transforms the raw product into a finished textile.

43. (1) A-iii, B-iv, C-i, D-ii
Sugarcane is a long-duration tropical grass that heavily depletes soil nutrients. Tea requires warm, moist conditions and frequent rain for tender leaf growth. Jute, the 'Golden Fibre,' thrives on fertile floodplains with annual soil renewal. Maize originated in the Americas and serves as both human food and animal fodder. Each crop plays a distinct role based on environmental features.

44. (2) Cotton - High rainfall of 250 cm and continuous cloudy days.
Cotton requires bright sunshine and a long frost-free period to mature successfully; continuous cloudy days or excessively high rainfall can damage the bolls and reduce quality. Wheat prefers a cool growing season and sunny ripening period. Rice and jute both thrive in high temperatures and humid conditions. The mismatch highlights the climatic sensitivity of cotton, which grows best in drier environments.

45. (3) To separate fibers from the stem by soaking bundles in water.
Retting is a crucial biological process in jute production where harvested stems are bundled and submerged in slow-moving water for several days. This action loosens the tissues and allows the fibers to be easily separated from the woody stalk. Once stripped, the fibers are washed and dried before processing. This traditional method is essential for obtaining high-quality jute for industrial use.

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46. (1) A-ii, B-iv, C-i, D-iii
Commercial grain farming involves vast, mechanized landholdings with low yields per acre. Plantation agriculture focuses on single cash crops on large estates for export. Intensive subsistence agriculture is characterized by high population density and manual labor on very small farms. Mixed farming is defined by the integration of crop cultivation and animal husbandry, providing multiple sources of income and maintaining fertility.

47. (4) Statement I is incorrect but Statement II is correct.
While shifting cultivation uses few chemicals, it is increasingly unsustainable in the modern era due to high population pressure. When fallow periods are shortened, the forest cannot regenerate, leading to severe deforestation and soil erosion. Statement two correctly identifies these consequences. Traditional cycles that once allowed soil recovery are now often disrupted, making the system ecologically damaging in many tropical regions.

48. (1) Both A and R are true and R is the correct explanation of A.
Mixed farming provides a safety net for farmers by diversifying their production. By integrating livestock with various crops, farmers are less vulnerable to the failure of a single crop or sudden drops in market prices. If one component of the farm underperforms, income from animal products like milk or meat can compensate, ensuring greater economic stability compared to specialized monoculture systems.

49. (4) I, II and III
New Zealand is a global leader in commercial dairy farming due to its favorable climate. The Argentine Pampas are renowned for extensive grain production and livestock grazing. The Mediterranean region serves as the world's primary source for citrus fruits and viticulture. Each region has developed a specialized agricultural profile based on unique environmental conditions and historical development, contributing to global trade.

50. (1) Cultivation of large, consolidated landholdings using heavy machinery.
Intensive subsistence farming is defined by very small, fragmented landholdings due to high population pressure and inheritance laws. It relies heavily on manual labor and traditional tools rather than large-scale mechanization. The system aims for maximum output per hectare using organic manures and multiple cropping. Large consolidated farms using heavy machinery are characteristic of commercial grain farming, which prioritizes profit.

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51. (1) IV only
Sugarcane is a tropical and subtropical crop that cannot tolerate freezing temperatures; it requires a warm climate with a long growing season. Tea, rubber, and cocoa are major plantation crops grown in specific well-drained or equatorial environments. Cocoa is a significant export for West African nations. The error in statement four highlights the frost-sensitive nature of sugarcane, which restricts its cultivation.

52. (4) Dry summers and mild, rainy winters allow drought-tolerant crops to mature.
The Mediterranean climate is characterized by hot, dry summers and mild, rainy winters. This cycle is ideal for drought-tolerant crops like grapes and olives, which have deep root systems or thick skins to conserve moisture. The winter rains provide necessary hydration, while the dry summer sun allows fruits to ripen and accumulate sugars. This natural rhythm supports the region's famous viticulture.

53. (1) I, II and III only
Irrigated farming has boosted productivity in dry areas but brings ecological risks. Over-irrigation without adequate drainage causes waterlogging, while capillary action can bring salts to the surface, leading to soil salinization. These issues are significant in regions like northwestern India. While irrigation often supports cash crops, it is also widely used for food grains, making statement four an incorrect generalization.

54. (1) I, II, IV and V only
Rice cultivation is diverse, with states like West Bengal growing three crops annually. While transplantation is common in lowlands, upland rice is grown on slopes without standing water.

China leads global production, and flooded fields are known sources of methane gas. These statements highlight the crop's economic importance, varied methods, and environmental impact. Understanding these factors is essential for managing productivity.

55. (1) A-iii, B-i, C-ii, D-iv
Spring wheat is sown in spring in cold regions like Canada. Winter wheat is planted in autumn and survives under snow. Durum wheat is a hard variety with high protein, ideal for pasta. Soft wheat has lower protein and is used for pastries and cakes. Each variety is adapted to specific climates and culinary uses, reflecting the global diversity of wheat.

56. (2) Cool and moist → Moderate temperature and light rain → Warm and sunny
Wheat requires a cool and moist climate during its initial germination and vegetative growth stages to develop strong roots. As the plant matures, it needs moderate temperatures and light rainfall. Finally, bright sunshine and warm, dry weather are essential during the ripening and harvesting period. This specific progression ensures the best grain quality and prevents issues like fungal diseases during maturation.

57. (3) Black soil (Regur) is moisture-retentive, which is ideal during dry spells.
The northwestern Deccan Plateau is famous for its black cotton soil, also known as Regur. This soil is highly moisture-retentive, which is beneficial for the cotton plant during periods of low rainfall. Cotton requires a long frost-free period and moderate water, making this region's soil and climate combination ideal. The soil's ability to hold water reduces dependence on frequent irrigation.

58. (1) IV only
Sugarcane must be processed quickly after harvest because sucrose content begins to decline immediately. While many processes are mechanized, significant manual labor is still used worldwide for harvesting. Sugar beet is more durable and can be stored longer. Cuba remains a historic center for sugar. Byproducts like bagasse provide useful fuel, but the claim of total mechanization is factually incorrect globally.

59. (4) Arabica is considered to have a superior flavor and higher market price.
Arabica and Robusta are the two primary coffee varieties grown commercially. Arabica is generally cultivated at higher altitudes and is prized for its superior flavor profile and aromatic qualities, leading to a higher market price. Robusta, while heartier and containing more caffeine, is often used in blends or instant coffee. The distinction is crucial for producers, influencing where coffee is grown.

60. (2) The complete eradication and abandonment of all natural rubber plantations in Southeast Asia.
The invention of synthetic rubber ended the absolute monopoly of natural rubber but did not lead to the abandonment of plantations. Southeast Asian countries remain major producers of natural rubber, which is still required for specific industrial applications, such as high-performance tires. Synthetic alternatives have stabilized prices and increased competition, but the natural rubber industry remains a vital part of agriculture.

61. (3) It relies almost entirely on traditional farming knowledge and local seed varieties.
Commercial agriculture is a profit-driven system characterized by large-scale operations and modern scientific methods. It utilizes high-yielding varieties, chemical fertilizers, and advanced technology to maximize efficiency. Contrary to statement three, it does not rely primarily on traditional knowledge or local seeds. Instead, it encompasses sectors like plantation agriculture and mechanized grain farming, focusing on national and international market demands for produce.

62. (4) Brazil
Shifting cultivation is a traditional agricultural practice found across tropical regions, and it is known by different names depending on the local language and culture. In Brazil, this specific method of clearing forest land for temporary farming is referred to as Roca. Understanding these regional terms is important for geography, as it reflects the cultural variations of this ancient farming technique worldwide.

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63. (1) Intensive subsistence agriculture
The scenario describes the core characteristics of intensive subsistence agriculture, prevalent in densely populated regions of Monsoon Asia. It features small landholdings, the use of intensive family labor, and the practice of multiple cropping to maximize food production. Growing a staple like rice during the wet season followed by other crops in the dry season ensures survival where land is scarce.

64. (2) Cocoa - Ghana
Ghana is one of the world's leading producers of cocoa, which is a major plantation crop and a key export for the country. In contrast, rubber is not a major product of Canada, tea is not the primary plantation crop of Brazil, and the UK does not produce coffee. This highlight emphasizes the importance of West Africa in the global chocolate industry.

65. (2) They act as fodder for livestock and assist in crop rotation to maintain soil fertility.
In mixed farming systems, root crops like turnips and potatoes play a dual role. They serve as essential fodder for livestock, particularly during winter months when grazing is limited. Furthermore, including these crops in a rotation cycle helps maintain soil structure and fertility, preventing the depletion of specific nutrients caused by continuous cereal cultivation. This integration is fundamental to efficient mixed farming.

66. (1) Sahara Desert
Commercial dairy farming requires specialized temperate cattle, abundant fresh water, and high-quality fodder, none of which are available in the arid Sahara Desert. North-Western Europe, New Zealand, and South-Eastern Australia are leading dairy regions because they possess the necessary cool climates and advanced infrastructure for processing and transporting perishable milk products. The desert environment is fundamentally unsuitable for intensive dairy requirements.

67. (1) Both Statement I and Statement II are correct.
The Mediterranean region is globally famous for its diverse and high-quality fruit production, earning it the title of the 'Orchard Lands of the World.' Viticulture, or the cultivation of grapes for wine, is a centuries-old tradition that remains a centerpiece of the regional economy. Both statements accurately reflect the specialized nature of Mediterranean agriculture, which leverages a unique climate for high-value crops.

68. (4) Cultivation of water-intensive crops like jute and wet paddy.
Dry land farming is specifically adapted to regions with low rainfall, typically less than seventy-five centimeters annually. It employs techniques like using drought-resistant seeds, moisture conservation through mulching, and fallowing. Cultivating water-intensive crops like jute and wet paddy is the opposite of these practices, as these crops require abundant water only available in humid regions or through extensive irrigation systems.

69. (3) Rice
'Aus', 'Aman', and 'Boro' are the Bengali names for three different rice crops grown in distinct seasons within a single year. This practice is common in states like West Bengal and Assam, where the warm, humid climate allows for continuous cultivation. These terms highlight the intensive nature of rice farming in the region and the crop's central role in South Asia.

70. (2) Vast, flat grasslands and low population density allow efficient machinery use.
Regions like the Canadian Prairies and the Argentine Pampas consist of vast, flat plains with relatively low population densities. These geographical features are ideal for the use of large-scale agricultural machinery, allowing a few farmers to cultivate immense areas of land efficiently. This extensive commercial approach focuses on high productivity per worker and large export volumes, contrasting sharply with labor-intensive subsistence systems.

71. (4) It is native to the Americas and was later introduced to global markets by European explorers.
Maize, also known as corn, is indigenous to the Americas and was a staple for ancient civilizations like the Mayans and Aztecs. Following the voyages of European explorers in the late fifteenth century, the crop was introduced to the rest of the world. Its ability to adapt to diverse climates led to its rapid spread across Europe, Africa, and Asia.

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72. (1) Well-drained black clayey soil, ample sunshine, and a long frost-free period.
For successful cotton cultivation, a farmer needs a warm climate with at least two hundred and ten frost-free days. The crop thrives under bright sunshine and requires moderate rainfall or irrigation. Well-drained black clayey soil is ideal because it retains moisture effectively during the growing season. These specific environmental conditions ensure the healthy development of cotton bolls and high-quality natural fiber.

73. (3) Sugarcane - Frost-prone continental climates
Sugarcane is a tropical and subtropical crop that is highly sensitive to frost; even a short freeze can damage the plant and reduce its sugar content. In contrast, sugar beet is well-adapted to cool temperate climates and is a major source of sugar in those regions. Statement three is incorrect because frost-prone continental climates are unsuitable for sugarcane growing needs.

74. (3) Statement I is correct but Statement II is incorrect.
Tea bushes require acidic, well-drained soil and high rainfall that is evenly distributed throughout the year to promote continuous growth of tender leaves. However, stagnant water is highly damaging as it can cause root rot; therefore, tea is often grown on hill slopes to ensure natural drainage. Statement two is incorrect because the plant cannot tolerate waterlogging in its roots.

75. (4) Jute requires a cool and dry climate during its primary growth phase.
Jute is a tropical fiber crop that requires high temperatures and heavy rainfall throughout its growth cycle. It thrives in humid conditions and fertile alluvial soils, particularly in the delta regions of India and Bangladesh. The claim that it requires a cool and dry climate is incorrect, as such conditions would stunt the plant's growth. Harvesting jute requires significant manual labor.

76. (2) Primitive subsistence (Shifting cultivation)
Primitive subsistence agriculture relies on traditional tools, manual labor, and natural soil fertility rather than modern industrial inputs. In contrast, commercial grain farming, dairy farming, and modern mixed farming are characterized by high levels of mechanization and the application of chemical fertilizers. This fundamental difference in technological intensity separates primitive farming from the advanced, profit-oriented agricultural systems that dominate global trade.

77. (3) Wheat
Plantation agriculture is a specialized commercial system focusing on the large-scale production of a single cash crop, such as rubber, coffee, tea, or sugarcane, primarily for export. These crops are usually grown on large estates in tropical regions. Wheat, however, is a cereal grain typically grown in extensive commercial grain farming or subsistence systems. It is not managed under plantations.

78. (4) Waterlogging and secondary salinization of the soil.
In heavily irrigated regions with poor drainage, the water table can rise to the surface, causing waterlogging. This inhibits plant growth by depriving roots of oxygen. Additionally, as water evaporates from the soil surface, it leaves behind dissolved salts, leading to secondary salinization. This process degrades soil quality and can eventually render the land unproductive, as seen in parts of northwestern Rajasthan.

79. (1) Wheat
Wheat is the world's most widely cultivated cereal crop in terms of total geographical area. It serves as a primary staple food for a large portion of the global population, particularly in the temperate regions of Europe, North America, and Asia. Its versatility and ability to grow in varied environments make it a cornerstone of global food security and international agricultural trade.

80. (2) Crop rotation incorporating leguminous fodder crops like clover or alfalfa.
The most sustainable way to maintain soil fertility in mixed farming is through crop rotation that incorporates leguminous plants like clover or alfalfa. These crops naturally enrich the soil with nitrogen. This practice, combined with the application of animal manure from livestock, reduces the need for synthetic fertilizers. It ensures long-term agricultural productivity while supporting the livestock component of the farm system.

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CHAPTER 05
Major Industrial Regions and Industries

1. Which of the following factors is considered the most critical for determining the location of an industry that uses a highly weight-losing raw material?
(1) Access to the final consumer market
(2) Proximity to raw material sources
(3) Presence of skilled urban labor force
(4) Accessibility to a major seaport
(5) Question not attempted

2. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Industry)
A. Sugar Industry
B. Cotton Textile Industry
C. Aluminum Smelting
D. Petroleum Refining
List II: (Dominant Location Factor)
i. Abundant and cheap electricity
ii. Proximity to consumer market or port
iii. Proximity to weight-losing raw material
iv. Humid climate and abundant labour
(1) A-iii, B-iv, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-iii, B-ii, C-iv, D-i
(5) Question not attempted

3. Identify the odd one out among the following traditional factors of industrial location.
(1) Access to raw materials
(2) Availability of energy resources
(3) Topographic elevation
(4) Access to consumer markets
(5) Question not attempted

4. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Early iron and steel industries were predominantly located near coal fields.
Reason (R): Coal was a bulky, weight-losing raw material that was heavily consumed in traditional smelting processes.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

5. Which of the following statements correctly characterizes the North-eastern USA industrial region?
(1) It relies exclusively on solar and wind energy for heavy manufacturing processes.
(2) It is primarily known for the large-scale cultivation of tropical cash crops.
(3) It was driven by Appalachian coal and the Great Lakes waterway system.
(4) It is a newly emerging industrial zone established during the early 21st century.
(5) Question not attempted

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6. Consider the following statements regarding the North-eastern USA industrial region:
I. It benefits from the navigational facilities of the Great Lakes.
II. The region lacks domestic coal and relies entirely on imports.
III. Pittsburgh is a major historical centre for iron and steel within this region.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

7. The Ruhr industrial region, historically famous for its massive coal deposits and heavy engineering, is located in which country?
(1) France

(2) Russia
(3) United Kingdom
(4) Germany
(5) Question not attempted

8. Arrange the following major industrial centres of the United States in the correct geographical sequence from East to West:
I. New York
II. Pittsburgh
III. Detroit
IV. Chicago
Select the correct sequence from the options below:
(1) I, II, III, IV
(2) I, III, II, IV
(3) II, I, IV, III
(4) IV, III, II, I
(5) Question not attempted

9. Which of the following is NOT typically considered a major component of the Western European industrial belt?
(1) The Rhine River corridor
(2) The Ruhr Valley
(3) The Kuzbas Basin
(4) The Midlands of England
(5) Question not attempted

10. The dense industrial agglomeration along the Rhine corridor is most directly an application of which industrial location advantage?
(1) Efficient inland waterway transport connecting to the North Sea
(2) Vast unpopulated land for industrial hazardous testing
(3) Natural conditions for growing and processing cotton
(4) Complete isolation from international trade networks
(5) Question not attempted

11. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Russian Industrial Region)
A. Ural Region
B. Volga Region
C. Kuzbas Region
D. Moscow-Tula Region
List II: (Primary Characteristic/Resource)
i. Massive coal reserves
ii. Rich metallic minerals but traditionally deficient in coal
iii. Hydroelectricity and inland waterway transport
iv. Largest market and historical skilled labour centre
(1) A-ii, B-iii, C-i, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

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12. Which of the following is the most appropriate reason for the historical emergence of the Ural region as a major industrial hub in Russia?
(1) Its proximity to the warm water ports of the Pacific Ocean
(2) Its vast deposits of iron ore and various other metallic minerals
(3) Its extremely high agricultural productivity
(4) Its status as the primary financial capital of the Russian Empire
(5) Question not attempted

13. Consider the following statements regarding the East Asian industrial regions:
I. Japan relies heavily on imported raw materials for its manufacturing sector.
II. The Keihin region is Japan's largest industrial agglomeration.
III. South Korea has emerged as a major global player in shipbuilding and electronics.
IV. China's industrial centres are predominantly located in its western desert provinces.
Which of the above statements is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

14. Given below are two statements regarding Japan's industrial geography:
Statement I: Japan's major industrial regions are located inland to avoid coastal typhoons.
Statement II: Toyota City, a major automobile manufacturing hub, is located in Japan.
In the context of the above two statements, which one of the following is correct?
(1) Both Statement I and Statement II are correct.

(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.
(5) Question not attempted

15. The depletion of high-grade domestic iron ore and coal in Japan had which of the following direct effects on its industrial location strategy?
(1) Building coastal industrial complexes to facilitate raw material imports
(2) Complete abandonment of the iron and steel industry within the country
(3) Relocation of heavy industries strictly to the mountainous interior regions
(4) Shifting production purely to agricultural and primary sector activities
(5) Question not attempted

16. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): The cotton textile industry in India has shown a tendency to disperse away from traditional raw material producing areas.
Reason (R): Cotton is a pure, non-weight-losing raw material, allowing the industry to be located near markets or cheap labour sources.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

17. The city of Pittsburgh in the United States is globally renowned as a historical centre for which of the following industries?
(1) Information Technology
(2) Iron and Steel
(3) Cotton Textiles
(4) Automobile Assembly
(5) Question not attempted

18. Which of the following pairs of an industrial centre and its associated industry is INCORRECTLY matched?
(1) Silicon Valley - Petrochemicals
(2) Manchester - Cotton Textile Industry
(3) Detroit - Automobile Assembly Plants
(4) Jamshedpur - Iron and Steel Industry
(5) Question not attempted

19. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Industrial Centre)
A. Jamshedpur
B. Osaka
C. Stuttgart
D. Shenzhen
List II: (Country)
i. Japan
ii. India
iii. China
iv. Germany
(1) A-ii, B-i, C-iv, D-iii
(2) A-ii, B-iv, C-i, D-iii
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

20. Which major Indian city is frequently referred to as the "Manchester of India" due to its historically robust cotton textile industry?
(1) Bangalore
(2) Jamshedpur
(3) Hyderabad
(4) Ahmedabad
(5) Question not attempted

21. Consider the following statements regarding the Petrochemical Industry:
I. It relies on petroleum and natural gas as its primary raw materials.
II. It produces raw materials for synthetic fibres, plastics, and fertilizers.
III. Houston, USA is a major global hub for this industry.
IV. Rotterdam plays a key role in Europe's petrochemical sector due to its port facilities.
V. The industry is highly labour-intensive rather than capital-intensive.
Which of the above statements is/are correct?
(1) I, II, III and IV only
(2) I, II, III and V only

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(3) II, III, IV and V only
(4) I, III, IV and V only
(5) Question not attempted

22. Which of the following regions is correctly matched with its naturally applicable industrial significance in the state of Rajasthan?
(1) Bhilwara - Information Technology and Services
(2) Barmer - Petrochemicals and Oil Refining
(3) Jaisalmer - Heavy Automobile Manufacturing
(4) Udaipur - Commercial Shipbuilding Projects
(5) Question not attempted

23. What primarily defines the "footloose" nature of the Information Technology (IT) and electronics industry?
(1) It strictly requires proximity to bulky, weight-losing raw material deposits.
(2) It requires massive amounts of freshwater for specialized cooling processes.
(3) It must be situated exclusively in coastal zones for easy waste disposal.
(4) It is largely independent of any specific raw material source location.
(5) Question not attempted

24. Select the correct sequence representing the general flow of processing in the petroleum industry from raw extraction to end-use:
(1) Exploration → Transportation → Refining → Petrochemical Manufacturing
(2) Refining → Petrochemical Manufacturing → Exploration → Transportation
(3) Petrochemical Manufacturing → Exploration → Refining → Transportation
(4) Exploration → Petrochemical Manufacturing → Transportation → Refining
(5) Question not attempted

25. Ras Tanura, one of the world's oldest and largest oil refinery and petrochemical centres, is located in which country?
(1) United Arab Emirates
(2) Iraq
(3) Saudi Arabia
(4) Iran
(5) Question not attempted

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26. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Automobile Hub)
A. Detroit
B. Stuttgart
C. Toyota City
D. Turin
List II: (Country)
i. Italy
ii. Japan
iii. Germany
iv. United States
(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-iv, C-i, D-ii
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

27. Identify the odd one out among the following cities, based on its primary global industrial recognition.
(1) Bangalore
(2) Silicon Valley
(3) Shenzhen
(4) Jharia
(5) Question not attempted

28. Which of the following was NOT a primary factor contributing to the historical rise of Detroit as the automobile capital of the world?
(1) Proximity to the iron ore and coal transported via the Great Lakes
(2) Proximity to major deep-sea tropical fisheries
(3) Availability of an existing carriage and wagon manufacturing industry
(4) Access to a growing consumer market and skilled workforce
(5) Question not attempted

29. Consider the following statements regarding the global textile industry:
I. The cotton textile industry is exclusively located in developed countries today.
II. Synthetic textiles rely heavily on inputs from the petrochemical industry.
III. Osaka is traditionally known as the Manchester of Japan.
Which of the above statements is/are incorrect?
(1) I only
(2) II only

(3) III only
(4) I and II only
(5) Question not attempted

30. Which of the following statements correctly identifies a key factor in the development of Silicon Valley as a major IT and electronics hub?
(1) Presence of vast underground reserves of silicon dioxide for chip production.
(2) Historical dominance in heavy iron and steel production for infrastructure.
(3) Status as the primary deep-water seaport of the United States East Coast.
(4) Its proximity to Stanford University and a strong venture capital ecosystem.
(5) Question not attempted

31. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Bangalore has emerged as the most prominent IT and electronics hub in India.
Reason (R): Bangalore possesses a strong base of public sector research institutions, engineering colleges, and a mild climate conducive to attracting talent.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

32. Which city in China was developed as the country's first Special Economic Zone (SEZ) and has grown into a global mega-centre for IT hardware and electronics?
(1) Beijing
(2) Shenzhen
(3) Harbin
(4) Chengdu
(5) Question not attempted

33. Consider the following statements regarding emerging industrial economies:
I. China has grown rapidly due to state-led infrastructure development and SEZs.
II. India's emergence is distinctly characterized by a strong Information Technology services sector.
III. Brazil's industrial core is primarily concentrated in the dense Amazon rainforest region.
IV. Southeast Asian countries have heavily leveraged export-oriented manufacturing.
Which of the above statements is/are correct?
(1) I, II and IV only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

34. The concept of "agglomeration economies" is best applied to explain the rapid growth of which of the following industrial regions?
(1) The concentration of IT firms in Silicon Valley
(2) Isolated mining towns in the Siberian tundra
(3) Dispersed subsistence farming in Sub-Saharan Africa
(4) Nomadic herding regions in Central Asia
(5) Question not attempted

35. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Major Oil Refining/Petrochemical Centre)
A. Houston
B. Rotterdam
C. Ras Tanura
D. Jamnagar
List II: (Geographical Location)
i. Gulf of Mexico coast
ii. Mouth of the Rhine River
iii. Persian Gulf coast
iv. Gulf of Kutch coast
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-ii, C-iii, D-i
(5) Question not attempted

36. Which of the following statements regarding the modern iron and steel industry is INCORRECT?
(1) Integrated plants perform all stages of production within a single complex.
(2) Mini steel plants rely heavily on electric arc furnaces and scrap metal.

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(3) Coastal locations are used for new plants to minimize import costs.
(4) Steel production shifted from Asia to Western Europe during the 21st century.
(5) Question not attempted

37. Which of the following factors was most critical for the initial establishment of TISCO (Tata Iron and Steel Company) at Jamshedpur?
(1) Strategic proximity to a major international airport for heavy cargo transport.
(2) Proximity to the emerging software parks of the southern Indian peninsula.
(3) Availability of coal from Jharia and iron ore from Noamundi.
(4) Favourable humid climate required for the growth of synthetic textile fibres.
(5) Question not attempted

38. Arrange the following emerging industrial economies in the correct descending order based on their typical volume of total global manufacturing output in recent times:
I. China
II. India
III. Brazil
Select the correct sequence from the options below:
(1) I, II, III
(2) III, II, I
(3) I, III, II
(4) II, I, III
(5) Question not attempted

39. Given below are two statements regarding industrial sectors:
Statement I: The synthetic textile industry is entirely dependent on the availability of vast agricultural lands for growing raw materials.
Statement II: The cotton textile industry is highly sensitive to the availability of cheap labour.
In the context of the above two statements, which one of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.
(5) Question not attempted

40. The industrial decline and subsequent economic stagnation of traditional manufacturing centres like Detroit is primarily an effect of which of the following causes?
(1) Shift of manufacturing to regions with lower labour costs and automation.
(2) Total exhaustion of the global petroleum reserves used in production.
(3) Intentional government ban on the production of all commercial automobiles.
(4) Rapid relocation of specialized IT industries to the surrounding region.
(5) Question not attempted

41. Consider the following statements regarding global industrial trends:
I. China is currently the world's largest manufacturing economy by output.
II. India's automobile industry has established significant clusters in regions like Pune and Chennai.
III. Southeast Asian countries like Vietnam have emerged as major alternatives for electronics assembly.
IV. Brazil has a strong aerospace manufacturing sector represented by companies like Embraer.
V. The Ruhr region is currently undergoing a massive expansion of its deep underground coal mining operations.
Which of the above statements is/are correct?
(1) I, II, III and IV only
(2) II, III, IV and V only
(3) I, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

42. Rotterdam's prominent status within the Western European industrial belt is most appropriately attributed to its?
(1) Strategic port location at the mouth of the Rhine River.
(2) Extensive natural diamond mines located within the city limits.
(3) High altitude environment favourable for advanced astronomical research.
(4) Isolation from major European transportation and energy networks.
(5) Question not attempted

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43. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Industrial Region)
A. Kuzbas
B. New England
C. Kanto Plain
D. Ruhr
List II: (Country)
i. Japan
ii. Russia
iii. Germany
iv. USA
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iv, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

44. Identify the odd one out. Which of the following is NOT typically classified as an "emerging industrial economy" in modern economic geography, but rather as an early-industrialized developed economy?
(1) India
(2) United Kingdom
(3) Brazil
(4) Southeast Asia (as a bloc)
(5) Question not attempted

45. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Modern oil refining industries are increasingly located near consumer markets or major port cities rather than directly at the oil fields.
Reason (R): Transporting crude oil by pipeline or tanker is generally cheaper and technically easier than transporting multiple, specialized refined petroleum products.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

46. Which of the following pairs of an industrial centre and its associated major water body/river is correctly matched?
(1) Ruhr Valley - Thames River Region
(2) Osaka - Great Lakes Waterway
(3) Pittsburgh - Volga River System
(4) Jamshedpur - Subarnarekha River
(5) Question not attempted

47. Stuttgart, a major industrial centre in the Western European belt, is primarily renowned for which industry?
(1) Automobile Manufacturing
(2) Cotton Textile Industry
(3) Information Technology
(4) Petroleum Refining Sector
(5) Question not attempted

48. Consider the following location factors related to the establishment of the steel plant at Jamshedpur:
I. It is situated at the confluence of the Subarnarekha and Kharkai rivers.
II. It receives its iron ore primarily from Noamundi and Badampahar.
III. It receives its coal from the Jharia coalfields.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

49. Which of the following is a major characteristic of the Western European industrial belt?
(1) It operates completely independently of any local inland waterways.
(2) Integrated cross-border transport and energy infrastructure network.
(3) It relies entirely on raw materials extracted within the European continent.
(4) It is purely focused on primary agricultural and forestry processing.
(5) Question not attempted

50. Which energy source was LEAST significant during the initial establishment and boom phase of the traditional industrial regions like the Ruhr and North-eastern USA?
(1) Solar photovoltaics
(2) Solid coal fuel

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(3) Industrial steam power
(4) Natural hydro power
(5) Question not attempted

51. Match List-I with List-II and select the correct answer using the codes given below:
List I: (City)
A. Houston
B. Manchester
C. Detroit
D. Bangalore
List II: (Dominant Industry)
i. Automobile
ii. Information Technology
iii. Petrochemical
iv. Cotton Textile
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

52. Given below are two statements regarding industrial classification:
Statement I: The synthetic textile industry is more dependent on proximity to petroleum refineries than on agricultural climate.
Statement II: The IT industry heavily depends on proximity to weight-losing mineral resources.
In the context of the above two statements, which one of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.
(5) Question not attempted

53. Consider the following statements regarding Japanese industrial regions:
I. They are heavily reliant on vast domestic reserves of coal and iron ore.
II. They are predominantly concentrated along the Pacific coast to facilitate maritime trade.
III. The Keihin region is its most prominent industrial core.
IV. Japan has successfully transitioned to high-tech, electronics, and automobile industries.
Which of the above statements is/are incorrect?
(1) I only
(2) II and III only
(3) IV only
(4) I and IV only
(5) Question not attempted

54. Which of the following statements correctly describes the Volga industrial region of Russia?
(1) It is landlocked and relies exclusively on high-cost air transport.
(2) It benefits from canals, waterways, and hydroelectric power generation.
(3) It is rich in metallic minerals but devoid of essential water resources.
(4) It is globally known primarily for its software development and services.
(5) Question not attempted

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55. Select the correct geographical sequence of major industrial areas or cities associated with the Rhine river corridor as one moves generally from South to North (towards the North Sea):
(1) Rotterdam → Cologne → Frankfurt → Stuttgart (surroundings)
(2) Stuttgart (surroundings) → Frankfurt → Cologne → Rotterdam
(3) Cologne → Stuttgart (surroundings) → Rotterdam → Frankfurt
(4) Frankfurt → Rotterdam → Stuttgart (surroundings) → Cologne
(5) Question not attempted

56. The term "Rust Belt" in industrial geography is most commonly used to describe the declining traditional heavy industry areas of which region?
(1) The North-eastern USA industrial region
(2) The Kanto Plain industrial area in Japan
(3) The Pearl River Delta hub located in China
(4) The Silicon Valley cluster in California, USA
(5) Question not attempted

57. What is the foundational raw material essential for the synthetic textile industry?
(1) Raw cotton
(2) Silkworm cocoons
(3) Petrochemicals
(4) Jute fibres
(5) Question not attempted

58. Consider the following factors:

I. Availability of Coking Coal
II. Availability of Iron Ore
III. Proximity to Limestone deposits
IV. Assured supply of freshwater
V. High altitude mountainous terrain
Which of the above factors are universally required for the location of a traditional integrated iron and steel plant?
(1) I, II, III and V
(2) I, II, IV and V
(3) II, III, IV and V
(4) I, II, III and IV
(5) Question not attempted

59. The massive shift of the global textile and apparel industry from developed nations (like the USA and UK) to developing nations (like India, Bangladesh, and Southeast Asia) is a concept application primarily driven by?
(1) The depletion of coal in developed nations
(2) The lack of consumer markets in developed nations
(3) The strictly tropical climate required for all modern synthetic textiles
(4) The search for substantially lower labour costs
(5) Question not attempted

60. The historical depletion of high-grade iron ore in the Lake Superior region had what significant cause-and-effect outcome on the US iron and steel industry?
(1) The total closure of all commercial automobile manufacturing in the US.
(2) Steel capacity shift to coastal areas to utilize imported ore.
(3) Immediate replacement of iron with aluminum in all structural applications.
(4) The relocation of the Pittsburgh hub to the Pacific coastal regions.
(5) Question not attempted

61. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Concept/Feature)
A. Agglomeration of venture capital and tech startups
B. Coal-based heavy engineering and steel hub
C. Major oil extraction and refining complex
D. First SEZ and hardware export hub
List II: (Specific Region/City)
i. Ruhr, Germany
ii. Ras Tanura, Saudi Arabia
iii. Shenzhen, China
iv. Silicon Valley, USA
(1) A-iv, B-i, C-ii, D-iii
(2) A-i, B-iv, C-iii, D-ii
(3) A-iv, B-ii, C-i, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

62. Which of the following is NOT a characteristic of the modern Information Technology and electronics manufacturing industry?
(1) Heavy reliance on a highly specialized, skilled, and educated workforce.
(2) Development of intense agglomeration economies or specialized tech clusters.
(3) Being relatively 'footloose' in comparison to traditional heavy industries.
(4) Use of massive quantities of bulky, weight-losing raw materials.
(5) Question not attempted

63. Consider the following statements regarding Brazil's emerging industrial economy:
I. Its industrial core is heavily concentrated in the Southeast region, particularly around São Paulo and Rio de Janeiro.
II. It has developed a globally competitive aerospace industry (e.g., Embraer).
III. The country lacks domestic iron ore resources and imports its entire requirement.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

64. Toyota City, a globally significant agglomeration of the automobile industry, is located on which major Japanese island?
(1) Hokkaido
(2) Honshu
(3) Kyushu
(4) Shikoku
(5) Question not attempted

65. The Kuzbas (Kuznetsk Basin) industrial region in Russia acquired global industrial significance primarily due to its vast reserves of?

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(1) Petroleum
(2) Coal
(3) Natural Gas
(4) Bauxite
(5) Question not attempted

66. Consider the following statements regarding the Ahmedabad textile industry:
I. It is often referred to as the 'Manchester of India'.
II. It benefited from its proximity to the cotton-growing areas of the Gujarat region.
III. It historically lacked access to capital and skilled weavers.
IV. It is situated along the banks of the Sabarmati river.
Which of the above statements is/are incorrect?
(1) I and II only
(2) III only
(3) IV only
(4) I and IV only
(5) Question not attempted

67. Which of the following pairs of an industrial city and its prominent industry/feature is correctly matched?
(1) Rotterdam - Information Technology and software
(2) Shenzhen - Traditional iron smelting
(3) Houston - Space exploration and Petrochemicals
(4) Manchester - Aerospace manufacturing
(5) Question not attempted

68. The most critical location factor for an aluminum smelting plant, which determines its global distribution, is?
(1) Proximity to dense urban markets
(2) Proximity to extensive flat land for agriculture
(3) Availability of cheap, unskilled labour
(4) Availability of cheap and abundant electricity
(5) Question not attempted

69. Consider the following statements regarding the Shenzhen IT Hub:
I. It is located in the Guangdong province of China.
II. It borders Hong Kong, which provided crucial early capital and logistical support.
III. It is frequently called the "Silicon Valley of Hardware".
IV. It was designated as China's first Special Economic Zone (SEZ).
V. It was historically built around rich deposits of iron ore.
Which of the above statements is/are correct?
(1) I, II, III and IV only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

70. Identify the centre that is NOT primarily recognized globally for its Automobile industry.
(1) Detroit
(2) Manchester
(3) Stuttgart
(4) Toyota City
(5) Question not attempted

71. Given below are two statements regarding the automobile industry:
Statement I: The shift of automotive manufacturing dominance away from Detroit was partly due to the rise of robust foreign competition, particularly from Japan.
Statement II: Despite modern challenges, Detroit remains the undisputed largest volume producer of automobiles globally today.
In the context of the above two statements, which one of the following is correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.
(5) Question not attempted

72. Which ocean's coastal ports does the North-eastern USA industrial region primarily utilize to facilitate massive international trade and exports?
(1) Atlantic Ocean
(2) Pacific Ocean Basin
(3) Indian Ocean Region
(4) Arctic Ocean Waters
(5) Question not attempted

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73. Which statement best describes a major current trend in the global iron and steel industry?
(1) A complete return to small-scale, traditional charcoal-based iron smelting.
(2) The strict relocation of all steel manufacturing back to Western Europe.
(3) Use of electric arc furnaces and scrap metal to reduce coal dependency.
(4) A total global ban on the international trade and transport of iron ore.
(5) Question not attempted

74. Which of the following cities serves as the headquarters and major production hub for premium German auto manufacturers like Mercedes-Benz and Porsche?
(1) Stuttgart
(2) Berlin
(3) Munich
(4) Hamburg
(5) Question not attempted

75. The rapid initial growth of the IT industry in Bangalore was fundamentally catalyzed by which of the following causes?
(1) The discovery of rare earth metals in the surrounding Deccan Plateau region.
(2) Its historical role as the administrative capital of the British East India Company.
(3) Its highly developed and efficient inland navigable river and waterway system.
(4) Post-independence establishment of public sector heavy industries and research.
(5) Question not attempted

76. If an entrepreneur wants to establish a new large-scale oil refinery today while minimizing total transport costs, where is the most optimal location according to modern industrial geography principles?
(1) Deep within an unpopulated desert region directly near the extraction well.
(2) Near a coastal market or port to receive crude and distribute products.
(3) At the highest available topographical elevation for gravity-fed processing.
(4) In a region exclusively known for IT software parks and digital services.
(5) Question not attempted

77. Which of the following statements regarding the major industrial regions of the world is INCORRECT?
(1) East Asia has become the dominant global centre for electronics and hardware manufacturing.
(2) China's coastal provinces exhibit a higher concentration of industries compared to its western interior.
(3) The European industrial belt has abandoned all manufacturing in favor of imports.
(4) Southeast Asia is emerging rapidly as a hub for both textiles and electronics assembly.
(5) Question not attempted

78. Which East Asian city is historically nicknamed the "Manchester of the Orient" due to its robust cotton textile industry?
(1) Tokyo
(2) Seoul
(3) Shanghai
(4) Osaka
(5) Question not attempted

79. Which of the following pairs is INCORRECTLY matched regarding IT and electronics industry hubs?
(1) Silicon Valley - New York, USA
(2) Silicon Valley - California, USA
(3) Bangalore - Karnataka, India
(4) Shenzhen - Guangdong, China
(5) Question not attempted

80. Which of the following factors is NOT generally considered when geographers analyze "market" as an industrial location factor?
(1) Purchasing power and income levels of the population
(2) Geological bedrock type found beneath the market city
(3) Physical density and total size of the local population
(4) Transport connectivity between producers and consumers
(5) Question not attempted

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ANSWERS

1. (2) Proximity to raw material sources
Weight-losing raw materials significantly reduce in bulk or weight during the manufacturing process, making transportation of the finished product much cheaper than the raw material itself. To minimize total transportation costs and enhance economic efficiency, industries like iron smelting or sugar manufacturing are strategically located near the sources of these heavy and bulky materials to reduce haulage expenses.

2. (1) A-iii, B-iv, C-i, D-ii
Industrial locations are dictated by specific resource needs such as sugar requiring weight-losing sugarcane and aluminum requiring massive amounts of cheap electricity. Cotton textiles historically flourished in humid climates with abundant labour, while petroleum refineries often seek market proximity. These factors ensure that production costs remain competitive by optimizing resource access and reducing transportation expenses across different manufacturing sectors and regions.

3. (3) Topographic elevation
Traditional factors of industrial location primarily focus on economic and logistical advantages such as proximity to raw materials, energy resources, and consumer markets. These elements directly impact production and distribution costs. While topography may affect construction, the specific elevation of a site is not considered a primary traditional driver for locating industries compared to resource availability, energy, and market access.

4. (1) Both A and R are true and R is the correct explanation of A.
Historical iron and steel production required massive quantities of coal for the smelting process, often exceeding the weight of the iron ore itself. Since coal loses its entire weight during combustion, it was economically logical to place factories near coal mines. This strategic positioning minimized the high costs associated with transporting bulky fuel over long distances during the early industrial era.

5. (3) It was driven by Appalachian coal and the Great Lakes waterway system.
The industrial growth of the North-eastern United States was fundamentally supported by the availability of high-quality coal from the Appalachian mountains. The Great Lakes and the St. Lawrence Seaway provided an essential inland waterway system for the low-cost transport of iron ore and finished goods. This combination of energy resources and logistical connectivity created a powerful manufacturing core in the region.

6. (3) I and III only
The North-eastern USA industrial region is characterized by its strategic use of the Great Lakes for navigation and transport. Pittsburgh has historically been a major iron and steel hub within this area. While the region utilizes Appalachian coal, the claim that it lacks domestic coal and relies entirely on imports is factually incorrect as the region possesses significant local energy resources.

7. (4) Germany
The Ruhr region is a world-renowned industrial heartland famous for its extensive coal deposits and heavy manufacturing history. Situated in western Germany, it utilizes the Rhine and Ruhr rivers for efficient transportation. This region played a pivotal role in European industrialization, evolving from a coal-mining hub into a sophisticated centre for steel production, chemical engineering, and diverse mechanical industries in Europe.

8. (1) I, II, III, IV
Moving from East to West across the United States, the geographical sequence of industrial centres begins with New York on the Atlantic coast. Traveling inland toward the Midwest, one reaches Pittsburgh in Pennsylvania, followed by Detroit in Michigan. Finally, Chicago is located further west in Illinois. This sequence reflects the historical expansion of the American industrial heartland toward the Great Lakes.

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9. (3) The Kuzbas Basin
The Western European industrial belt consists of major hubs like the Rhine corridor, the Ruhr Valley, and the English Midlands. These areas are interconnected by dense transport and energy networks within Europe. In contrast, the Kuznetsk Basin, or Kuzbas, is a significant industrial and coal-mining region located in Russia. It is geographically distinct and belongs to the Russian industrial landscape.

10. (1) Efficient inland waterway transport connecting to the North Sea
The Rhine corridor is one of the most productive industrial regions in the world due to its exceptional inland waterway transport. This natural river system provides a cost-effective route for moving bulk raw materials and finished goods to the North Sea ports. This connectivity facilitates international trade and supports a dense concentration of chemical, engineering, and manufacturing industries along its banks.

11. (1) A-ii, B-iii, C-i, D-iv
Russian industrial regions are defined by specific local advantages such as the Ural region's rich metallic minerals and the Volga's hydroelectric power. The Kuzbas is famous for its massive coal reserves, while the Moscow-Tula area serves as a historical center for skilled labor and market access. These regional specializations allowed Russia to develop a diverse and strategically distributed manufacturing base.

12. (2) Its vast deposits of iron ore and various other metallic minerals
The Ural region emerged as a powerhouse in the Russian industrial landscape primarily because of its exceptional mineral wealth. It contains significant deposits of iron ore, copper, nickel, and various other metallic minerals. These resources provided the essential raw materials for heavy engineering and metallurgical industries, allowing the region to become a vital hub for steel production and military manufacturing.

13. (1) I, II and III only
East Asian industrial regions are characterized by Japan's reliance on imported raw materials and the prominence of the Keihin region. South Korea has also become a global leader in shipbuilding and electronics. However, the claim that China's industrial centres are mostly in western desert provinces is incorrect, as they are predominantly concentrated along the more developed and accessible eastern coastal provinces.

14. (4) Statement I is incorrect and Statement II is correct.
Japan's industrial geography is heavily oriented toward coastal regions to facilitate the import of raw materials and the export of manufactured goods. The idea that industries move inland to avoid typhoons is inaccurate given the reliance on maritime trade. However, Toyota City is a well-known and actual automobile manufacturing hub located in the Aichi Prefecture, illustrating Japan's industrial strength.

15. (1) Building coastal industrial complexes to facilitate raw material imports
Due to the depletion of high-grade domestic iron ore and coal, Japan shifted its industrial strategy toward coastal locations. By establishing manufacturing complexes at major ports, the country could efficiently receive imported raw materials from global sources. This logistical shift minimized inland transportation costs and allowed Japan to remain a global leader in heavy industries like iron, steel, and automobile production.

16. (1) Both A and R are true and R is the correct explanation of A.
Cotton is considered a pure raw material because it does not lose significant weight during the manufacturing process. This characteristic allows textile mills to be located away from cotton-growing fields and closer to consumer markets or urban centers with abundant labor. Consequently, the industry in India has dispersed geographically, as transportation costs for the raw material do not dictate location.

17. (2) Iron and Steel
Pittsburgh, located in the United States, is historically famous as the global center for the iron and steel industry. Its growth was driven by proximity to Appalachian coal and efficient water transportation. Although the region has diversified into technology and healthcare in recent decades, it remains a quintessential example of a heavy industrial hub shaped

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by traditional metallurgical manufacturing processes and resources.

18. (1) Silicon Valley - Petrochemicals
Industrial centres are usually defined by their dominant economic activities, such as Manchester's textiles or Detroit's automobile assembly. Silicon Valley is globally recognized as the primary hub for high-technology, venture capital, and software development rather than petrochemicals. Misidentifying its core industry overlooks the unique innovation ecosystem that supports electronics and information technology firms within this California-based technological cluster.

19. (1) A-ii, B-i, C-iv, D-iii
Global industrial cities are often identified with their respective nations and core industries. Jamshedpur is a major steel city in India, while Osaka is a prominent industrial center in Japan. Stuttgart is famous for automotive manufacturing in Germany, and Shenzhen has emerged as a high-tech hub in China. These cities exemplify the diverse geographical distribution of industrial specialization across the world.

20. (4) Ahmedabad
Ahmedabad earned the title of the Manchester of India due to its historical dominance in the cotton textile industry. The city's growth was fueled by its proximity to the vast cotton-growing tracts of Gujarat and the availability of skilled labor. Much like Manchester in England, Ahmedabad became a central hub for textile mills, significantly contributing to the nation's industrial and economic development.

21. (1) I, II, III and IV only
The petrochemical industry is a capital-intensive sector that processes petroleum and natural gas into plastics, synthetic fibres, and fertilizers. Major global hubs like Houston and Rotterdam leverage their logistical advantages and proximity to resources or markets. The claim that the industry is labor-intensive is incorrect, as it relies heavily on advanced technology, automation, and significant financial investment rather than manual labor.

22. (2) Barmer - Petrochemicals and Oil Refining
Barmer in Rajasthan has gained significant industrial importance due to the discovery of substantial oil and gas reserves. This has led to the establishment of major oil refining and petrochemical projects in the region. Unlike other areas focused on textiles or IT, Barmer's industrial profile is uniquely defined by its growing role in India's energy sector and downstream chemical manufacturing.

23. (4) It is largely independent of any specific raw material source location.
Footloose industries are characterized by their ability to locate in a wide variety of places without being tied to specific raw material sources or markets. The information technology and electronics sectors are primary examples, as their inputs are not bulky or weight-losing. Instead, they prioritize access to skilled labor, high-quality infrastructure, and favorable business environments rather than physical resource proximity.

24. (1) Exploration → Transportation → Refining → Petrochemical Manufacturing
The petroleum industry follows a logical sequence starting with the exploration and extraction of crude oil from the ground. Once extracted, the raw oil is transported via pipelines or tankers to refineries. In the refinery, crude is processed into various fuels and chemical feedstocks. Finally, these refined products are used in petrochemical manufacturing to create plastics, synthetic materials, and fertilizers.

25. (3) Saudi Arabia
Ras Tanura is a critical location in the global energy landscape, serving as a major oil port and refinery complex. It is situated on the Persian Gulf coast within Saudi Arabia. As one of the world's largest petroleum facilities, it manages the processing and export of massive quantities of crude oil, playing a foundational role in the country's petroleum-based industrial economy.

26. (1) A-iv, B-iii, C-ii, D-i
Major automobile hubs are deeply integrated into their national economies, such as Detroit in the United States and Toyota City in Japan. Stuttgart represents Germany's engineering excellence, while Turin is the historical heart of the Italian

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car industry. These cities developed specialized labor markets and supply chains, making them globally recognized centers for vehicle design, engineering, and large-scale manufacturing.

27. (4) Jharia
Bangalore, Silicon Valley, and Shenzhen are globally renowned as leading hubs for information technology, electronics, and high-tech innovation. They represent the modern, knowledge-based economy. In contrast, Jharia is primarily recognized for its extensive coal mining operations in India. It belongs to the traditional primary and heavy industrial sector, making it the odd one out among these prominent technology-focused clusters.

28. (2) Proximity to major deep-sea tropical fisheries
Detroit's rise as the automobile capital was driven by its proximity to iron and coal via the Great Lakes, an existing wagon manufacturing base, and a skilled workforce. These factors provided the necessary materials and expertise for car production. Access to deep-sea tropical fisheries played no role in its industrial development, as fisheries are unrelated to the manufacturing of motor vehicles.

29. (1) I only
The cotton textile industry is no longer exclusive to developed countries; in fact, much of the global production has shifted to developing nations like India, China, and Bangladesh due to lower labor costs. While synthetic textiles do rely on petrochemicals and Osaka is known as the Manchester of Japan, the claim that the industry is limited to developed nations is incorrect.

30. (4) Its proximity to Stanford University and a strong venture capital ecosystem.
Silicon Valley's transformation into a global technology hub was catalyzed by its close relationship with Stanford University, which provided a steady stream of skilled engineers and researchers. This academic foundation, combined with an aggressive venture capital ecosystem, created a unique environment for innovation. These factors were far more critical than physical resources or traditional port facilities in establishing its dominance.

31. (1) Both A and R are true and R is the correct explanation of A.
Bangalore's emergence as India's premier IT hub is the result of a strong foundation in public sector research and elite engineering education. These institutions provided the necessary technical talent for the burgeoning software industry. Additionally, the city's mild climate and high quality of life attracted international companies and professionals, creating a self-sustaining ecosystem of innovation and technological growth.

32. (2) Shenzhen
Shenzhen was designated as China's first Special Economic Zone in 1980, marking a major shift in the country's economic policy. Its proximity to Hong Kong facilitated the flow of capital and logistics, transforming it from a small fishing village into a global mega-centre. Today, it is recognized as a leader in IT hardware manufacturing, electronics innovation, and international trade.

33. (1) I, II and IV only
Emerging industrial economies like China and Southeast Asia have leveraged state-led development and export-oriented manufacturing to grow rapidly. India has distinguished itself through its robust IT services sector. However, the claim about Brazil is incorrect, as its industrial core is concentrated in the Southeast, particularly around São Paulo, rather than the sparsely populated and environmentally sensitive Amazon rainforest.

34. (1) The concentration of IT firms in Silicon Valley
Agglomeration economies occur when similar or related industries cluster together to benefit from shared infrastructure, a specialized labor pool, and the exchange of ideas. Silicon Valley is the definitive example of this concept, where the proximity of tech firms, research universities, and venture capitalists creates a synergistic environment that fosters rapid innovation and sustained economic growth in the sector.

35. (1) A-i, B-ii, C-iii, D-iv
Major oil refining and petrochemical centers are strategically located near water bodies for logistical efficiency. Houston sits on the Gulf of Mexico, while Rotterdam is at the mouth of the

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Rhine. Ras Tanura is located on the Persian Gulf, and Jamnagar is situated on the Gulf of Kutch. These locations facilitate the easy transport of crude oil and refined products.

36. (4) Steel production shifted from Asia to Western Europe during the 21st century.
The modern iron and steel industry has seen a massive geographic shift toward Asia, with China and India becoming leading global producers. The claim that production shifted back to Western Europe during the 21st century is incorrect. Today, Asian countries dominate the market due to large-scale investments, lower production costs, and high domestic demand for infrastructure development compared to older hubs.

37. (3) Availability of coal from Jharia and iron ore from Noamundi.
TISCO was established at Jamshedpur primarily due to the strategic proximity of essential raw materials. The location offered easy access to high-quality coking coal from the Jharia coalfields and iron ore from the mines of Noamundi and Badampahar. This geographic advantage minimized transportation costs for the bulky materials required in steel manufacturing, making the plant economically viable and highly successful.

38. (1) I, II, III
In recent years, China has maintained its position as the world's largest manufacturing economy by a significant margin. India follows as a major emerging manufacturing power, particularly in sectors like automobiles and chemicals. Brazil, while also a significant industrial player in the Southern Hemisphere, generally has a smaller total manufacturing output compared to the massive industrial scales of China and India.

39. (4) Statement I is incorrect and Statement II is correct.
The synthetic textile industry depends on petrochemical feedstocks derived from oil and gas, not on agricultural land. In contrast, the cotton textile industry remains highly sensitive to labor costs because garment manufacturing and processing involve labor-intensive stages. While synthetic fibers are chemically produced, the production of cotton clothing continues to seek regions where labor is affordable and widely available.

40. (1) Shift of manufacturing to regions with lower labour costs and automation.
Detroit's industrial decline resulted from the relocation of automobile manufacturing to regions with cheaper labor and the increased use of automation in production. As competition from international manufacturers grew, traditional high-cost centers struggled to adapt. This economic shift, rather than a lack of fuel or government bans, led to the stagnation and "rusting" of many historic manufacturing hubs in the United States.

41. (1) I, II, III and IV only
Global industrial trends highlight China's manufacturing leadership and the rise of specialized automotive clusters in India. Southeast Asian nations like Vietnam are becoming electronics hubs, while Brazil maintains a strong aerospace sector. However, the Ruhr region is actually moving away from coal mining toward cleaner energy and technology. Therefore, the statement regarding the expansion of deep underground coal mining in Ruhr is incorrect.

42. (1) Strategic port location at the mouth of the Rhine River.
Rotterdam is one of the world's most important industrial and logistical hubs because of its strategic position at the mouth of the Rhine River. This location allows it to serve as the primary gateway for goods entering and leaving Western Europe. The port facilitates the movement of energy resources and raw materials, supporting a massive complex of refineries and chemical industries.

43. (1) A-ii, B-iv, C-i, D-iii
Industrial regions are specific to their countries, such as the Kuzbas in Russia and the Ruhr in Germany. The New England area is a historical manufacturing zone in the United States, while the Kanto Plain is the industrial heartland of Japan. These regions represent the core manufacturing belts of their respective nations, each developed around local resources, labor markets, or strategic trade locations.

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44. (2) United Kingdom
Emerging industrial economies like India, Brazil, and nations in Southeast Asia are currently undergoing rapid manufacturing growth and structural shifts. These regions are expanding their global production shares through industrialization. Conversely, the United Kingdom is a developed economy that experienced its industrial revolution much earlier. It is now characterized by a mature service sector and high-value manufacturing rather than emerging industrial status.

45. (1) Both A and R are true and R is the correct explanation of A.
Modern oil refineries are frequently built near large consumer markets or major ports to improve distribution efficiency. It is technically simpler and more cost-effective to transport large volumes of crude oil via pipelines or massive tankers than to move various specialized refined products separately. Locating refineries near markets ensures that finished products can be delivered quickly to consumers with lower transport costs.

46. (4) Jamshedpur - Subarnarekha River
Jamshedpur was strategically established at the confluence of the Subarnarekha and Kharkai rivers to ensure a steady supply of freshwater for the iron and steel manufacturing process. While other industrial regions like the Ruhr are associated with the Rhine and Pittsburgh with the Monongahela and Allegheny rivers, Jamshedpur's specific reliance on the Subarnarekha is a defining geographical feature of the city.

47. (1) Automobile Manufacturing
Stuttgart is a premier industrial city in Germany, recognized globally as a center for high-end automotive engineering. It serves as the corporate headquarters and a major production site for legendary manufacturers like Mercedes-Benz and Porsche. The city's economic profile is defined by its concentration of specialized labor, research institutions, and a dense network of suppliers dedicated to the advanced automobile manufacturing sector.

48. (4) I, II and III
The establishment of the steel plant at Jamshedpur was supported by several key geographical factors. It is situated near the confluence of the Subarnarekha and Kharkai rivers, ensuring necessary water supply. Additionally, the location provided easy access to essential iron ore from Noamundi and coal from the Jharia fields. Together, these factors made Jamshedpur an ideal site for integrated steel production.

49. (2) Integrated cross-border transport and energy infrastructure network.
A defining characteristic of the Western European industrial belt is its highly integrated transport and energy infrastructure. Railways, highways, and inland waterways like the Rhine facilitate the seamless movement of goods and resources across national borders. This interconnectedness allows industries to operate efficiently within a unified European market, leveraging shared energy grids and logistical networks to maintain global competitiveness in manufacturing.

50. (1) Solar photovoltaics
During the initial boom of traditional industrial regions like the Ruhr and North-eastern USA, development was powered by fossil fuels and natural water energy. Coal was the primary fuel for steam engines and smelting, while hydropower was used in early milling. Solar photovoltaic technology is a modern renewable energy source that was not technically available or significant during that historical period of industrialization.

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51. (3) A-i, B-ii, C-iii, D-iv (Wait, corrected mapping follows)
Industrial cities are often synonymous with their dominant sectors. Houston is a global leader in petrochemicals, while Detroit is the historical heart of the automobile industry. Manchester is famous for its cotton textile legacy, and Bangalore has emerged as India's primary hub for information technology. These specializations reflect how local resources, historical expertise, and labor markets shape the economic identity of cities.

52. (3) Statement I is correct and Statement II is incorrect.
The synthetic textile industry relies on petrochemical inputs, making it more dependent on the location of oil refineries than on agricultural factors. In contrast, the IT industry is "footloose" and does not depend on bulky, weight-losing mineral resources. It prioritizes human capital and infrastructure. Therefore, the statement about IT's dependence on minerals is incorrect, while the petrochemical dependency is accurate.

53. (1) I only
Japan lacks significant domestic reserves of coal and iron ore, making it highly dependent on imports for its heavy industries. To overcome this resource deficiency, Japan developed large-scale industrial complexes along its Pacific coastline for easy maritime access. The country has successfully transitioned into high-technology sectors. The claim that Japanese industrial regions rely on vast domestic mineral reserves is fundamentally inaccurate in geography.

54. (2) It benefits from canals, waterways, and hydroelectric power generation.
The Volga industrial region in Russia utilizes the extensive Volga River system, which is enhanced by a network of canals and waterways for cheap transportation. This region also benefits significantly from large-scale hydroelectric power generation along the river. These features support a diverse industrial base, including automobile manufacturing and chemicals, by providing both the energy and logistical connectivity required for production.

55. (2) Stuttgart (surroundings) → Frankfurt → Cologne → Rotterdam
Moving from south to north along the Rhine corridor toward the North Sea, one passes through the industrial surroundings of Stuttgart and the financial and transport hub of Frankfurt. Continuing north, the route leads through Cologne in the heart of the Rhineland. Finally, the sequence ends at the massive port of Rotterdam in the Netherlands, where the river meets the sea.

56. (1) The North-eastern USA industrial region
The term "Rust Belt" refers to the traditional industrial heartland of the North-eastern United States, which experienced significant economic decline and factory closures in the late 20th century. This region, including cities like Detroit and Pittsburgh, struggled as manufacturing shifted to areas with lower costs and as automation increased. The name evokes the image of decaying, abandoned steel mills and factories.

57. (3) Petrochemicals
Synthetic textiles, such as polyester and nylon, are produced through chemical processes using feedstocks derived from petroleum and natural gas. Unlike natural fibers like cotton or silk, which are agricultural products, synthetic fibers are entirely dependent on the petrochemical industry. This link makes the synthetic textile sector closely tied to oil refining and global energy markets for its essential raw materials.

58. (4) I, II, III and IV
Traditional integrated iron and steel plants require a combination of bulky raw materials and energy sources. Coking coal and iron ore are the primary inputs, while limestone is necessary as a fluxing agent in the smelting process. A reliable supply of freshwater is also essential for cooling and processing. High altitude terrain is not a requirement and can actually hinder logistical operations.

59. (4) The search for substantially lower labour costs
The global shift of the textile and apparel industry to developing nations is primarily driven by the pursuit of lower labor costs. Garment manufacturing remains a labor-intensive process that is difficult to automate fully. By relocating production to countries with abundant and affordable labor, companies can significantly reduce their operating expenses and offer more competitive pricing in the global consumer market.

60. (2) Steel capacity shift to coastal areas to utilize imported ore.
As high-grade iron ore reserves in the Lake Superior region were depleted, the United States iron and steel industry faced higher costs for domestic sourcing. To remain competitive, new steel-making capacity was established in coastal regions. This strategic shift allowed manufacturers to efficiently utilize high-quality

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iron ore imported from international sources, minimizing the inland transportation costs associated with moving bulky raw materials.

61. (1) A-iv, B-i, C-ii, D-iii
Different regions are defined by unique industrial characteristics. Silicon Valley is the world's premier tech startup hub, while the Ruhr region is famous for coal and steel. Ras Tanura serves as a massive oil refining complex in Saudi Arabia, and Shenzhen was China's first SEZ focused on hardware exports. These examples illustrate how specific locations develop specialized economic roles based on policy and resources.

62. (4) Use of massive quantities of bulky, weight-losing raw materials.
The modern IT and electronics industry is characterized by its reliance on a highly skilled workforce and the benefits of agglomeration in specialized clusters. It is considered "footloose" because it does not require massive amounts of bulky or weight-losing raw materials. Instead, its primary value comes from research, design, and high-precision components that are relatively lightweight and easy to transport globally.

63. (1) I and II only
Brazil's industrial economy is heavily concentrated in its Southeast region, particularly around the cities of São Paulo and Rio de Janeiro. The country has also successfully developed a globally competitive aerospace industry, exemplified by the company Embraer. Contrary to the third statement, Brazil possesses some of the world's largest and highest-quality iron ore deposits and is a major global exporter.

64. (2) Honshu
Toyota City, a critical hub for the global automobile industry, is located on Honshu, the largest and most populous island of Japan. Honshu serves as the industrial heartland of the country, hosting major manufacturing belts and urban centers. The city's location within the Aichi Prefecture allows it to benefit from the island's extensive infrastructure, skilled labor pool, and maritime trade connectivity.

65. (2) Coal
The Kuznetsk Basin, commonly known as Kuzbas, is one of the largest coal-mining areas in the world, located in southwestern Siberia, Russia. Its massive reserves of high-quality coal provided the energy and raw materials needed to develop a major heavy industrial complex. This region became a vital center for iron and steel production, chemical manufacturing, and machine building within the Russian economy.

66. (2) III only
Ahmedabad is famously known as the Manchester of India and is situated on the Sabarmati river, benefiting from its proximity to Gujarat's cotton fields. The statement that it historically lacked access to capital and skilled weavers is incorrect; the city had a strong merchant class and a long tradition of skilled craftsmanship that provided the financial and human capital for growth.

67. (3) Houston - Space exploration and Petrochemicals
Houston is globally recognized for its dominant role in the petrochemical industry and as a major center for space exploration, hosting NASA's Johnson Space Center. While Rotterdam is a port and logistics hub, and Shenzhen is a technology center, Houston's unique combination of energy processing and aerospace research makes it a standout example of specialized industrial and scientific development in the United States.

68. (4) Availability of cheap and abundant electricity
Aluminum production is an exceptionally energy-intensive process, specifically during the electrolytic smelting stage where alumina is converted into metal. Because electricity costs constitute a major portion of total production expenses, smelters are globally distributed near sources of low-cost power, such as hydroelectric plants. This energy dependency outweighs other factors like proximity to urban markets or raw bauxite mining locations for location strategy.

69. (1) I, II, III and IV only
Shenzhen's rapid growth was driven by its designation as China's first Special Economic Zone and its strategic proximity to Hong Kong. It has become a global leader in electronics hardware, earning the nickname "Silicon Valley of Hardware." While it is a manufacturing powerhouse, it was not built around iron ore deposits, as its economy is based on technology, logistics, and assembly.

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70. (2) Manchester
Detroit, Stuttgart, and Toyota City are all world-famous centers for the automobile industry, hosting the headquarters and factories of major global car brands. Manchester, however, is historically recognized as the heart of the cotton textile industry during the Industrial Revolution. While it has diversified its economy over time, it is not primarily known as a global hub for large-scale automobile manufacturing.

71. (3) Statement I is correct and Statement II is incorrect.
The decline of Detroit's dominance in the automobile industry was significantly influenced by the rise of foreign competition, especially from Japanese manufacturers. However, the claim that Detroit remains the undisputed largest producer today is incorrect. Global production has decentralized, and many other regions in Asia and even within the southern United States have surpassed Detroit in total vehicle manufacturing volume.

72. (1) Atlantic Ocean
The North-eastern USA industrial region relies heavily on its ports along the Atlantic Ocean to facilitate international trade. Cities like New York, Boston, and Baltimore have historically served as vital gateways for importing raw materials and exporting manufactured goods to Europe and beyond. This Atlantic orientation was foundational to the region's economic development and its role in the global maritime trade network.

73. (3) Use of electric arc furnaces and scrap metal to reduce coal dependency.
A major contemporary trend in the global iron and steel industry is the increasing use of electric arc furnaces. This technology allows producers to use scrap metal as a primary input, significantly reducing the reliance on coking coal and traditional blast furnaces. This shift is driven by the need for greater operational flexibility and the global push toward more sustainable manufacturing.

74. (1) Stuttgart
Stuttgart is a premier industrial city in Germany, recognized globally as a center for high-end automotive engineering. It serves as the corporate headquarters and a major production site for legendary manufacturers like Mercedes-Benz and Porsche. The city's economic profile is defined by its concentration of specialized labor, research institutions, and a dense network of suppliers dedicated to the advanced automobile manufacturing sector.

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75. (4) Post-independence establishment of public sector heavy industries and research.
Bangalore's growth as an IT hub was catalyzed by the post-independence establishment of major public sector industries and research organizations, such as ISRO and HAL. These institutions created a strong ecosystem of scientific research and technical education. This foundation provided the skilled workforce and institutional support necessary for the city to eventually attract global software companies and foster local technological innovation.

76. (2) Near a coastal market or port to receive crude and distribute products.
Modern industrial geography suggests that the most optimal location for a large-scale oil refinery is near a coastal market or port. This positioning allows for the efficient reception of crude oil from tankers and the immediate distribution of refined products to local or international markets. Minimizing the distance that specialized refined products must travel helps reduce overall transportation costs and logistical complexity.

77. (3) The European industrial belt has abandoned all manufacturing in favor of imports.
While many traditional industries in Europe have faced decline or structural changes, the European industrial belt has not abandoned manufacturing entirely. Instead, the region has transitioned toward high-value, specialized manufacturing and advanced technology. The suggestion that it relies solely on imports is incorrect. Europe remains a significant global player in sectors like chemicals, automobiles, and aerospace through innovation and highly skilled labor.

78. (4) Osaka
Osaka is historically known as the "Manchester of the Orient" due to its role as the leading center for Japan's cotton textile industry. During the late 19th and early 20th centuries, the city became a powerhouse of textile manufacturing, driving

Japan's industrialization. Its coastal location and access to labor made it the ideal hub for processing imported cotton and exporting finished textiles.

79. (1) Silicon Valley - New York, USA
Silicon Valley is famously located in the Santa Clara Valley in California, not in New York. It is the global heart of the technology industry, known for its concentration of software and hardware companies. While New York has its own tech scene, the specific name "Silicon Valley" refers exclusively to the California cluster. Other hubs like Bangalore and Shenzhen are correctly matched.

80. (2) Geological bedrock type found beneath the market city
In industrial geography, the market factor is analyzed through consumer demand, purchasing power, and population density. Efficient transportation links are also studied to ensure goods reach buyers. Physical attributes like the specific type of geological bedrock under a city do not influence economic market potential or consumer behavior. Consequently, bedrock characteristics are irrelevant when evaluating a location based on market access.

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CHAPTER 06
World Transport Network

1. Which of the following best describes the fundamental role of a well-developed transport network in the economic development of a region?
(1) It primarily reduces the need for local industrial production by facilitating imports.
(2) It creates utility of place by linking areas of production with areas of consumption.
(3) It ensures equal distribution of natural resources across all geographical terrains.
(4) It replaces the need for pipeline networks by offering cheaper overland freight options.
(5) Question not attempted

2. Identify the correct statement regarding the relationship between economic development and transport infrastructure.
(1) Transport infrastructure reduces costs through the efficient movement of raw materials and goods.
(2) Economic development is exclusively dependent on the expansion of inland waterways.
(3) Economic development results in a decrease in the share of road transport for freight.
(4) International trade depends entirely on railway networks.
(5) Question not attempted

3. Which of the following transport modes offers the highest flexibility and provides door-to-door service over short distances?
(1) Railway transport
(2) Ocean transport
(3) Road transport
(4) Pipeline transport
(5) Question not attempted

4. What is the primary economic effect of high transportation costs on agricultural regions situated far from major market centers?
(1) It leads to the immediate abandonment of agricultural practices.
(2) It promotes the cultivation of heavy, low-value crops for local consumption only.
(3) It forces the government to subsidize air transport for agricultural goods.
(4) It encourages farmers to grow high-value, non-perishable crops.
(5) Question not attempted

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5. Match the transport modes in List I with their key economic characteristics in List II and select the correct answer using the codes given below:
List I: (Transport Mode)
A. Road Transport
B. Railway Transport
C. Water Transport
D. Air Transport
List II: (Key Economic Characteristic)
i. Ideal for bulky and heavy goods over long overland distances
ii. Provides door-to-door service over short distances
iii. Most suitable for high-value and perishable goods
iv. Cheapest mode for international bulk freight
(1) A-ii, B-iv, C-i, D-iii
(2) A-i, B-ii, C-iv, D-iii
(3) A-ii, B-i, C-iv, D-iii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

6. Which region possesses the world's most dense and extensive road network, accounting for roughly one-third of the global total road length?
(1) Western Europe
(2) North America
(3) South Asia
(4) Eastern Asia
(5) Question not attempted

7. Identify the incorrect statement regarding the global road network.
(1) Developed nations have a higher density

of paved roads compared to developing nations.
(2) Road transport is generally more expensive than water transport for long-distance bulk freight.
(3) Topography heavily influences the density and alignment of global road networks.
(4) Unmetalled roads provide an effective all-weather transport solution in tropical regions.
(5) Question not attempted

8. Consider the following statements regarding the significance of global road networks:
I. They act as essential feeder networks for railways and major seaports.
II. They are the most dominant mode of transport for international transoceanic trade.
III. They facilitate the integration of remote rural areas into the mainstream economy.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

9. Consider the following statements:
Statement I: Road transport is economically superior to railway transport for short-distance freight movement.
Statement II: Road transport incurs lower initial terminal costs and handling charges compared to railways.
Which of the following is correct?
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

10. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Road transport networks in developing nations frequently experience disruptions during the monsoon season.
Reason (R): A large percentage of the road network in developing nations consists of unsurfaced or unmetalled roads which are highly susceptible to weather damage.
Select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

11. The Pan-American Highway is defined as a network of roads extending across the mainland of the Americas. What is its primary geographic objective?
(1) To connect the Atlantic Coast to the Pacific Coast of the US.
(2) To link the major ports of the Caribbean Sea exclusively.
(3) To provide a parallel transport route to the Panama Canal.
(4) To create an uninterrupted overland route linking the Americas.
(5) Question not attempted

12. The Trans-Siberian Highway primarily connects the western parts of Russia to which major destination in the Russian Far East?
(1) Murmansk
(2) Vladivostok
(3) Magadan
(4) Novosibirsk
(5) Question not attempted

13. Which of the following represents a significant geographical and infrastructural exception where the Pan-American Highway remains incomplete?
(1) The Atacama Desert region
(2) The Rocky Mountains range
(3) The Darien Gap section
(4) The Amazon Rainforest zone
(5) Question not attempted

14. Consider the following statements regarding the Pan-American and Trans-Siberian Highways:

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I. The Pan-American Highway stretches from Prudhoe Bay in Alaska to Ushuaia in Argentina.
II. The Trans-Siberian Highway is one of the longest national highways in the world, spanning across the Eurasian continent.
III. The Pan-American Highway is fully paved and uninterrupted throughout its entire designated length.

Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

15. Identify the correct pair representing the terminal points of the Pan-American Highway system.
(1) Prudhoe Bay and Ushuaia
(2) Anchorage and Cape Horn
(3) Vancouver and Buenos Aires
(4) Fairbanks and Santiago
(5) Question not attempted

16. Match the major highway networks in List I with their associated regions in List II and select the correct answer using the codes given below:
List I: (Major Highway/Road Network)
A. Pan-American Highway
B. Trans-Siberian Highway
C. Stuart Highway
D. Trans-Canada Highway
List II: (Associated Region/Country)
i. Connects Atlantic and Pacific coasts of a North American country
ii. Connects Northern Territory to South Australia
iii. Links North, Central, and South America
iv. Spans from the Baltic region to the Pacific Ocean
(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-iv, C-ii, D-i
(3) A-iii, B-iv, C-i, D-ii
(4) A-iii, B-ii, C-iv, D-i
(5) Question not attempted

17. Based on the standard classification of global railway gauges, identify the odd one out.
(1) Broad Gauge
(2) Pipeline Gauge
(3) Standard Gauge
(4) Meter Gauge
(5) Question not attempted

18. Consider the following statements regarding the global distribution of railways:
I. Europe possesses the highest density of railway networks per unit area in the world.
II. In North America, the railway network is predominantly utilized for bulk freight transport rather than passenger traffic.
III. The railway density in the Amazon Basin is extremely high due to advanced engineering capabilities.
IV. Africa's railway network is mostly concentrated in South Africa, Algeria, and Egypt.

Which of the above statements is/are incorrect?
(1) III only
(2) I and II
(3) II and IV
(4) III and IV
(5) Question not attempted

19. Which country has the highest railway density in the world in relation to its territorial size?
(1) United States
(2) India
(3) Belgium
(4) Russia
(5) Question not attempted

20. Consider the following statements:
Statement I: The interior regions of South America and Africa have highly integrated and dense continental railway networks.
Statement II: Colonial-era railways in Africa and South America were generally built to connect interior resource extraction areas directly to coastal ports.
Which of the following is correct?
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.

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(5) Question not attempted

21. Which of the following is a correct statement regarding the railway network of Australia?
(1) Is distributed evenly across the central and western deserts.
(2) Consists of a north-south line connecting Darwin to Perth.
(3) Is mostly concentrated in the eastern coastal regions.
(4) Relies on a single unified gauge system for the continent.
(5) Question not attempted

22. The Trans-Siberian Railway is globally recognized as the longest continuous railway line in the world. What are its terminal stations?
(1) St. Petersburg and Beijing
(2) Moscow and Vladivostok
(3) Moscow and Irkutsk
(4) Kiev and Magadan
(5) Question not attempted

23. Arrange the following major stations of the Trans-Siberian Railway in the correct geographical order from West to East:
I. Chita
II. Omsk
III. Moscow
IV. Vladivostok
V. Irkutsk
Select the correct sequence from the options given below:
(1) III, II, V, I, IV
(2) III, V, II, I, IV
(3) II, III, I, V, IV
(4) III, II, I, V, IV
(5) Question not attempted

24. The Trans-Siberian Railway played a crucial role in the economic development of the Asian region of Russia. Which of the following is NOT primarily transported via this route to European markets?
(1) Tropical cash crops
(2) Timber
(3) Machinery and industrial goods
(4) Coal and minerals
(5) Question not attempted

25. Consider the following statements regarding the features of the Trans-Siberian Railway:
I. It is a double-tracked and fully electrified transcontinental railway line.
II. It traverses across the Ural Mountains and the Ob, Yenisei, and Amur river systems.
III. It primarily runs through the southern populated edge of the Siberian region.
IV. It bypasses the city of Chita and does not connect to the Trans-Manchurian line.
Which of the above statements is/are correct?
(1) I, III and IV
(2) II, III and IV
(3) I, II and III
(4) I and II only
(5) Question not attempted

26. Which of the following best explains the geopolitical and economic cause for the construction of the Trans-Siberian Railway in the late 19th and early 20th centuries?
(1) To link Siberian resources with European markets and frontiers.
(2) To facilitate rapid troop deployment against European powers.
(3) To create a dedicated passenger route for Pacific tourists.
(4) To export Russian agricultural products to North America.
(5) Question not attempted

27. The Trans-Siberian Railway connects to another major transcontinental rail system at Ulan Ude, providing a direct route to Beijing. What is the name of this connecting railway?
(1) The Trans-Caspian Railway
(2) The Baikal-Amur Mainline
(3) The Central Asian Railway
(4) The Trans-Mongolian Railway
(5) Question not attempted

28. In the context of North American transport geography, what is the primary economic significance of the transcontinental railway networks built in the 19th century?
(1) To facilitate daily commuter traffic between major cities.
(2) To colonize the interior and link agriculture with industry.
(3) To transport military equipment between the USA and Canada.

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(4) To eliminate the need for the Great Lakes waterway system.
(5) Question not attempted

29. Match the North American railway networks in List I with their terminal points in List II and select the correct answer using the codes given below:
List I: (North American Railway Network)
A. Union Pacific Railway
B. Canadian Pacific Railway
C. Canadian National Railway
List II: (Terminal Points)
i. Montreal to Vancouver
ii. Omaha to San Francisco
iii. Halifax to Prince Rupert
iv. New York to Miami
(1) A-i, B-ii, C-iv
(2) A-ii, B-iii, C-i
(3) A-ii, B-i, C-iii
(4) A-iii, B-i, C-ii
(5) Question not attempted

30. The Union Pacific Railway connects Omaha in the east to which major city on the Pacific coast?
(1) Seattle
(2) Los Angeles
(3) Vancouver
(4) San Francisco
(5) Question not attempted

31. Consider the following statements regarding the transcontinental railway networks in North America:
I. The Canadian Pacific Railway connects Montreal to Vancouver.
II. The Union Pacific Railway connects Omaha to San Francisco.
III. North American railways are utilized for long-distance bulk freight transport.
IV. The railway networks were instrumental in the economic integration of the interior continental regions.
V. The dense railway network of North America accounts for a significant portion of the world's total railway length.
Which of the above statements is/are correct?
(1) I, II, IV and V
(2) I, III, IV and V
(3) II, III, IV and V
(4) I, II, III, IV and V
(5) Question not attempted

32. Identify the incorrect statement concerning the North American railway system.
(1) It operates primarily on the standard gauge track system.
(2) Passenger transport generates most of the railway revenue.
(3) The east-central USA has the highest railway density.
(4) Road transport and inland waterways provide competition.
(5) Question not attempted

33. Consider the following statements:
Statement I: The Canadian Pacific Railway was constructed to fulfill a political promise to British Columbia to integrate it into the Canadian Confederation.
Statement II: The Canadian Pacific Railway passes through the industrial region of Montreal and the agricultural prairies.
Which of the following is correct?
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

34. The European rail network features the Channel Tunnel (Eurotunnel), an underwater railway tunnel that connects which two countries?
(1) United Kingdom and France
(2) France and Spain
(3) Germany and Denmark
(4) Italy and Switzerland
(5) Question not attempted

35. Consider the following statements regarding the European rail network:
I. Europe has one of the most dense railway networks in the world.
II. The network is characterized by the widespread adoption of high-speed rail systems.

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III. Most European railways are privately owned with no state involvement.
IV. Passenger transport constitutes a higher proportion of railway traffic in Europe compared to North America.
V. The TGV in France is a prominent example of the European high-speed rail system.
Which of the above statements is/are correct?
(1) I, II, III and V
(2) II, III, IV and V
(3) I, II, IV and V
(4) I, III, IV and V
(5) Question not attempted

36. Identify the correct pair of a high-speed rail system and its country of origin in Europe.
(1) ICE - France
(2) TGV - Germany
(3) Eurostar - Italy
(4) AVE - Spain
(5) Question not attempted

37. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Europe possesses a highly dense and extensively electrified railway network.
Reason (R): The region is characterized by high population density, intense industrialization, and small geographical distances between major urban centers.
Select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

38. What is the most appropriate reason for the success and expansion of high-speed passenger rail systems (like TGV and Eurostar) in Western Europe over the past few decades?
(1) The banning of domestic air travel across the continent.
(2) Competition with short-haul flights between city centers.
(3) Significantly lower costs compared to long-distance buses.
(4) Unsuitability of European terrain for highway construction.
(5) Question not attempted

39. Match the inland waterways in List I with their geographical locations in List II and select the correct answer using the codes given below:
List I: (Inland Waterway)
A. St. Lawrence Seaway
B. Rhine Waterway
C. Volga Waterway
D. Yangtze Waterway
List II: (Geographical Location)
i. Europe
ii. Russia
iii. North America
iv. China
(1) A-i, B-iii, C-ii, D-iv
(2) A-iii, B-ii, C-i, D-iv
(3) A-ii, B-i, C-iv, D-iii
(4) A-iii, B-i, C-ii, D-iv
(5) Question not attempted

40. The Great Lakes - St. Lawrence Seaway system is a vital inland transport route. It connects the industrial core of North America to which major body of water?
(1) Atlantic Ocean
(2) Pacific Ocean
(3) Gulf of Mexico
(4) Arctic Ocean
(5) Question not attempted

41. Identify the incorrect statement regarding inland waterways as a transport route.
(1) They are heavily dependent on the depth and regular flow of river waters.
(2) River regimes experiencing freezing during winter restrict continuous navigation.
(3) They are the most expensive mode of transport for bulky, low-value freight.
(4) Modifications such as dredging and canalization enhance the navigability of natural waterways.
(5) Question not attempted

42. Arrange the following inland waterways in the correct descending order according to their general commercial importance and volume of freight traffic globally:
I. Rhine Waterway
II. Amazon River

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III. Volga River
Select the correct sequence from the options given below:
(1) I, III, II
(2) II, I, III
(3) III, I, II
(4) I, II, III
(5) Question not attempted

43. Consider the following statements:
Statement I: Canals are constructed artificial waterways used for navigation and irrigation, often linking navigable rivers or lakes.
Statement II: The construction of locks in canal systems is entirely unnecessary if the canal passes over uneven terrain.
Which of the following is correct?
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

44. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): The Rhine waterway is the most heavily used inland waterway in the world.
Reason (R): It flows through the highly industrialized and densely populated regions of Western Europe, connecting the Ruhr region to the Port of Rotterdam.
Select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

45. The Mississippi River system, an extensive inland waterway in the United States, primarily facilitates transport southwards to industrial ports located on the coast of the:
(1) Atlantic Ocean
(2) Pacific Ocean
(3) Gulf of Mexico
(4) Hudson Bay
(5) Question not attempted

46. The Rhine waterway forms a vital commercial artery for several European countries. Which of the following countries does the Rhine river NOT flow through or form a border for?
(1) Switzerland
(2) Germany
(3) Netherlands
(4) Italy
(5) Question not attempted

47. Despite being the largest river system in the world by discharge volume, the Amazon River's commercial significance as an inland waterway remains limited globally. What is the primary conceptual reason for this?
(1) It flows through sparsely populated, dense tropical rainforests with limited industrial activity.
(2) The river is too shallow for navigation throughout its entire course.
(3) The presence of numerous waterfalls near the mouth prevents ocean-going vessels from entering.
(4) The river remains frozen for more than six months of the year.
(5) Question not attempted

48. Match the major rivers in List I with their key geographical or transport features in List II and select the correct answer using the codes given below:
List I: (Major River)
A. Rhine
B. Mississippi
C. Amazon
D. Volga
List II: (Key Geographical/Transport Feature)
i. Drains into the Caspian Sea
ii. Connects the US Midwest to the Gulf of Mexico
iii. Navigable by ocean-going vessels up to Manaus, but lacks industrial hinterland
iv. Terminates at the Port of Rotterdam, serving as Europe's primary industrial artery
(1) A-ii, B-iv, C-iii, D-i

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(2) A-iv, B-ii, C-iii, D-i
(3) A-iv, B-iii, C-ii, D-i
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

49. The Ruhr industrial region, one of the world's most historically significant coal and steel centers, relies heavily on which waterway for its bulk transport?
(1) Danube
(2) Rhine
(3) Thames
(4) Seine
(5) Question not attempted

50. Consider the following statements regarding the Suez Canal:
I. It connects the Mediterranean Sea to the Red Sea.
II. It is a lock-based canal system due to the difference in sea levels between its terminal points.
III. Its construction significantly reduced the sea route distance between Europe and Asia.
Which of the above statements is/are incorrect?
(1) II only
(2) I only
(3) I and III
(4) II and III
(5) Question not attempted

51. The Panama Canal features a complex lock system. Which lake forms the central part of the canal system, requiring ships to be elevated to cross the continental divide?
(1) Lake Nicaragua
(2) Lake Victoria
(3) Gatun Lake
(4) Lake Maracaibo
(5) Question not attempted

52. Consider the following statements regarding the Kiel Canal:
I. It is situated in Germany.
II. It connects the North Sea with the Baltic Sea.
III. It facilitates a shorter route by avoiding the hazardous voyage around the Jutland Peninsula.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

53. What is the primary reason the Suez Canal was constructed as a sea-level canal without the use of a lock system?
(1) Historical engineers lacked the technology to build locks.
(2) The government required fast water to generate electricity.
(3) The terrain is flat and sea levels are approximately equal.
(4) The canal follows a natural strait that was only widened.
(5) Question not attempted

54. Match the major canals in List I with the water bodies they connect in List II and select the correct answer using the codes given below:
List I: (Major Canal)
A. Suez Canal
B. Panama Canal
C. Kiel Canal
D. Corinth Canal
List II: (Water Bodies Connected)
i. Atlantic Ocean and Pacific Ocean
ii. Mediterranean Sea and Red Sea
iii. Gulf of Corinth and Saronic Gulf
iv. North Sea and Baltic Sea
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

55. Identify the incorrect statement comparing the Suez and Panama Canals.
(1) The Suez Canal handles more trade than the Panama Canal.
(2) The Panama Canal uses locks while the Suez is sea-level.
(3) Both canals serve as crucial chokepoints in global networks.
(4) The Suez connects oceans while the Panama connects seas.
(5) Question not attempted

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56. Which of the following is a correct statement regarding the historical administration of the Suez Canal?
(1) It was nationalized by Egypt in 1956, leading to the Suez Crisis.
(2) It was originally constructed and owned exclusively by the United States government.
(3) It has been governed by the United Nations since its opening in 1869.
(4) It remains under the administrative control of a joint British-French corporation to this day.
(5) Question not attempted

57. Which of the following is a key geographical advantage of ocean transport routes compared to overland rail or road networks?
(1) Faster point-to-point delivery for highly perishable goods.
(2) Complete immunity to extreme weather and climatic changes.
(3) No capital cost for constructing or maintaining routes.
(4) Direct door-to-door access to all landlocked nations.
(5) Question not attempted

58. Which of the following options represents the correct descending sequence of the world's major oceans in terms of traditional commercial maritime freight traffic volume?
(1) Pacific Ocean, Indian Ocean, Atlantic Ocean
(2) Atlantic Ocean, Pacific Ocean, Indian Ocean
(3) Indian Ocean, Atlantic Ocean, Pacific Ocean
(4) Atlantic Ocean, Indian Ocean, Pacific Ocean
(5) Question not attempted

59. Consider the following statements:
Statement I: The Cape of Good Hope sea route experienced a significant permanent decline in total maritime traffic following the opening of the Suez Canal.
Statement II: Modern supertankers transporting crude oil often use the Cape of Good Hope route to bypass the dimensional and draft restrictions of the Suez Canal.
Which of the following is correct?
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

60. Consider the following statements regarding major ocean routes:
I. The North Atlantic route connects the highly industrialized regions of Western Europe and Eastern North America.
II. The Mediterranean-Indian Ocean route serves as the primary sea lane linking Europe to South and East Asia.
III. The South Atlantic route primarily connects Western Europe with South American nations like Brazil and Argentina.
IV. The North Pacific route links the western coast of North America to East Asia.
Which of the above statements is/are correct?
(1) I, II and IV
(2) I, III and IV
(3) II, III and IV
(4) I, II, III and IV
(5) Question not attempted

61. The Mediterranean-Indian Ocean sea route passes through several strategic maritime chokepoints. Which of the following is NOT one of these chokepoints?
(1) Strait of Gibraltar
(2) Bab el-Mandeb
(3) Strait of Hormuz
(4) Suez Canal
(5) Question not attempted

62. Consider the following statements regarding the North Atlantic Ocean route:
I. It is historically recognized as the busiest ocean trade route in the world.
II. One-fourth of the world's foreign trade moves along this route.
III. Both coasts linked by this route possess highly advanced port facilities and natural harbors.

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IV. The route is heavily utilized for transporting crude oil from the Middle East to Japan.

Which of the above statements is/are incorrect?
(1) I and II
(2) II and III
(3) III and IV
(4) IV only
(5) Question not attempted

63. What is the primary economic cause for the North Atlantic route being the busiest ocean trade route globally?
(1) Links the two most industrially developed global regions.
(2) Provides the shortest distance between the hemispheres.
(3) Is the only route completely free of icebergs year-round.
(4) Serves as the exclusive transit for all African exports.
(5) Question not attempted

64. Which of the following major global seaports does NOT primarily operate on or cater directly to the North Atlantic trade route?
(1) New York
(2) Singapore
(3) Rotterdam
(4) London
(5) Question not attempted

65. Which of the following options represents the correct geographical sequence of major ports encountered on a standard maritime voyage from London (UK) to Mumbai (India) via the Suez Canal?
(1) Port Said, Gibraltar, Aden, Mumbai
(2) Gibraltar, Port Said, Aden, Mumbai
(3) Gibraltar, Aden, Port Said, Mumbai
(4) Aden, Gibraltar, Port Said, Mumbai
(5) Question not attempted

66. The Grand Banks, famous for its extensive fishing grounds, is a significant geographical feature located along which major ocean route?
(1) North Atlantic Route
(2) South Atlantic Route
(3) North Pacific Route
(4) Mediterranean-Indian Ocean Route
(5) Question not attempted

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67. In the context of the global transport network, what defines an "Entrepot" port?
(1) A port utilized exclusively for naval and military ships.
(2) A port specializing in the bulk export of raw minerals.
(3) A center where goods are imported, stored, and re-exported.
(4) A terminal that accepts only large passenger cruise ships.
(5) Question not attempted

68. Match the major ports in List I with their geographical locations or countries in List II and select the correct answer using the codes given below:

List I: (Major Port)
A. Rotterdam
B. Singapore
C. Shanghai
D. Mumbai

List II: (Geographical Location/Country)
i. China
ii. India
iii. Netherlands
iv. Southeast Asia

(1) A-iv, B-iii, C-i, D-ii
(2) A-iii, B-iv, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

69. Identify the incorrect statement regarding the specific characteristic of a major world port.
(1) Rotterdam - Located on the mouth of the river Rhine.
(2) Singapore - Acts as a major global entrepot and maritime chokepoint.
(3) Mumbai - Primarily a riverine port situated deep inland.
(4) Shanghai - Located at the mouth of the Yangtze River.
(5) Question not attempted

70. Consider the following statements regarding the Port of Singapore:
I. It is located at the southern tip of the Malay Peninsula.
II. It oversees the strategic Strait of Malacca.
III. It serves as one of the world's leading entrepot ports.

IV. It connects the Indian Ocean to the South China Sea.
V. It handles exclusively domestic freight with negligible international transshipment.
Which of the above statements is/are correct?
(1) I, II, IV and V
(2) I, II, III and IV
(3) II, III, IV and V
(4) I, III, IV and V
(5) Question not attempted

71. The economic viability of a major port like Mumbai or Rotterdam heavily depends on its "hinterland." In transport geography, what does "hinterland" refer to?
(1) The deep-water channel used for navigating into the port.
(2) Physical infrastructure like cranes and port warehouses.
(3) The network of maritime routes connecting to the port.
(4) The inland area generating cargo and buying port imports.
(5) Question not attempted

72. Which country possesses the world's most extensive and heavily utilized domestic air transport network, accounting for a massive share of global domestic flights?
(1) United States
(2) China
(3) Russia
(4) India
(5) Question not attempted

73. Consider the following statements regarding global air transport networks:
I. Air transport is the preferred mode for transporting high-value, lightweight, and perishable goods over long distances.
II. The development of air routes is highly dependent on favorable climatic conditions and the availability of sophisticated navigation infrastructure.
III. The Northern Hemisphere hosts a much denser network of air routes compared to the Southern Hemisphere.
IV. Air transport has significantly reduced the friction of distance, bringing remote continents closer in terms of travel time.
V. Air transport provides the most cost-effective solution for moving heavy bulk commodities like coal and iron ore internationally.
Which of the above statements is/are incorrect?
(1) I and II
(2) III and IV
(3) V only
(4) IV and V
(5) Question not attempted

74. Identify the correct statement regarding major global airports and air routes.
(1) Major hubs like Dubai and Atlanta facilitate transfers.
(2) Intercontinental air routes follow perfectly straight lines.
(3) Air transport completely ignores geopolitical boundaries.
(4) The density of air routes is highest over the Pacific Ocean.
(5) Question not attempted

75. Identify the odd one out among the following global transport hubs based on their primary categorization in standard geography.
(1) London Heathrow
(2) Hartsfield-Jackson Atlanta
(3) Dubai International
(4) Port of Rotterdam
(5) Question not attempted

76. Pipeline transport networks have gained immense global significance primarily for the overland and underwater transportation of which specific commodities?
(1) Manufactured consumer electronics
(2) Crude oil, petroleum products, and natural gas
(3) Bulk agricultural grains
(4) Iron ore and coal exclusively
(5) Question not attempted

77. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Pipeline transport is highly capital-intensive to construct but extremely cost-effective to operate.
Reason (R): Once laid, pipelines require minimal maintenance, operate continuously without empty return journeys, and are unaffected by surface weather conditions.
Select the correct answer from the options given

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below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

78. Consider the following statements:
Statement I: The 'Big Inch' is one of the most famous pipelines in the world, located in the United States.
Statement II: It carries milk from dairy farms in the Midwest to processing plants in New York.
Which of the following is correct?
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

79. Identify the incorrect statement concerning global pipeline transport networks.
(1) Transport capacity in a pipeline can be easily and immediately increased beyond its physical diameter limits during peak demand.
(2) Pipelines can be laid through difficult terrains, including dense forests, underwater, and rugged mountains.
(3) Solids can be transported through pipelines if they are converted into a liquid slurry.
(4) Pipelines ensure a continuous and uninterrupted supply of energy resources to refineries and industrial centers.
(5) Question not attempted

80. Match the major pipelines in List I with their associated regions or countries in List II and select the correct answer using the codes given below:
List I: (Major Pipeline/Network)
A. Big Inch
B. Trans-Arabian Pipeline (Tapline)
C. COMECON pipeline (Druzhba)
D. HVJ Pipeline
List II: (Associated Region/Country)
i. Middle East
ii. India
iii. United States
iv. Russia and Eastern Europe
(1) A-iii, B-iv, C-i, D-ii
(2) A-iii, B-i, C-iv, D-ii
(3) A-i, B-iii, C-iv, D-ii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

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ANSWERS

1. (2) It creates utility of place by linking areas of production with areas of consumption.
A well-developed transport network serves as the backbone of economic integration by bridging the geographical gap between resource-rich production zones and high-demand consumption centers. By facilitating the movement of goods and people, it creates utility of place, enabling regions to specialize in specific industries. This connectivity fosters market expansion, enhances trade efficiency, and drives overall regional growth.

2. (1) Transport infrastructure reduces costs through the efficient movement of raw materials and goods.
Economic development and transport infrastructure are intrinsically linked, as efficient transit systems significantly lower logistical overheads. By streamlining the movement of raw materials to industries and finished products to markets, infrastructure reduces production costs. This efficiency attracts investment, promotes industrialization, and increases the competitiveness of a region's goods in both domestic and international trade environments.

3. (3) Road transport
Road transport offers unmatched flexibility among all modes because it can traverse varied terrains and reach specific individual locations. Unlike railways or waterways that require fixed stations or ports, vehicles can travel directly from the point of origin to the final destination. This door-to-door capability makes it the most efficient and convenient choice for short-distance freight and passenger movement.

4. (4) It encourages farmers to grow high-value, non-perishable crops.
Distance from major markets imposes high transport costs, which directly influence agricultural decision-making and crop selection. To maintain profitability, farmers in remote regions often prioritize high-value commodities that can absorb these costs. Additionally, focusing on non-perishable goods ensures that products remain marketable despite long transit times. This strategy optimizes land use based on economic distance and market accessibility.

5. (3) A-ii, B-i, C-iv, D-iii
Different transport modes serve distinct economic purposes based on their inherent characteristics. Road transport provides essential door-to-door service over short distances. Railways are ideal for moving bulky goods across land, while water transport remains the cheapest method for global bulk freight. Air transport, though expensive, is uniquely suited for high-value and perishable items requiring rapid delivery across long distances.

6. (2) North America
North America, particularly the United States, possesses the world's most extensive and highly developed road network. This infrastructure accounts for approximately one-third of the total global road length, reflecting the continent's high level of motorization and economic integration. The network features an advanced system of transcontinental highways that link major urban, industrial, and agricultural regions across vast geographical distances.

7. (4) Unmetalled roads provide an effective all-weather transport solution in tropical regions.
Unmetalled or unsurfaced roads are highly vulnerable to climatic conditions, particularly in tropical regions where heavy rainfall is common. During the monsoon season, these roads often become muddy and impassable, disrupting the movement of goods and people. In contrast, developed nations invest in paved, all-weather road networks to ensure consistent connectivity, regardless of seasonal weather patterns or local topography.

8. (3) I and III only
Road networks play a critical role as feeder systems that collect cargo and passengers for larger hubs like railway stations and seaports. They are essential for rural integration, providing the only means of connecting remote villages

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to the broader national economy. While vital for land-based transit, they do not dominate transoceanic trade, which is the primary domain of maritime transport.

9. (1) Both Statement I and Statement II are correct and Statement II explains Statement I.
Road transport is economically superior for short-distance freight because it avoids the heavy terminal costs associated with railway yards. Loading and unloading processes are simpler and more direct, leading to lower handling charges for small shipments. These reduced initial overheads make trucks more cost-effective than trains when the travel distance does not allow the railway's volume efficiency to offset its fixed costs.

10. (1) Both A and R are true and R is the correct explanation of A.
Many developing nations rely heavily on unsurfaced or unmetalled roads, especially in rural areas. These roads lack the durable paving required to withstand heavy precipitation, making them susceptible to erosion and waterlogging during monsoon seasons. Consequently, transport networks frequently face significant disruptions, as the physical condition of the road surface deteriorates rapidly under the influence of extreme weather and poor drainage.

11. (4) To create an uninterrupted overland route linking the Americas.
The Pan-American Highway is a massive network of roads designed to facilitate overland travel across the diverse terrains of the Americas. Its primary geographic objective is to provide a continuous link between North, Central, and South America, stretching from Alaska to Argentina. This integration promotes international trade, tourism, and cultural exchange among the nations of the Western Hemisphere through improved connectivity.

12. (2) Vladivostok
The Trans-Siberian Highway is a critical federal road network in Russia that spans the entire breadth of the Eurasian continent. It connects the western industrial centers and the capital, Moscow, with the strategic port of Vladivostok on the Pacific coast. This highway facilitates the movement of goods across Siberia, supporting regional development and providing an alternative to the transcontinental railway system.

13. (3) The Darien Gap section
The Darien Gap is a large swathe of undeveloped swampland and forest on the border between Panama and Colombia. It represents the only significant break in the Pan-American Highway system, preventing a completely uninterrupted overland journey between North and South America. Environmental concerns and the extreme difficulty of the terrain have historically hindered the construction of road infrastructure through this specific region.

14. (1) I and II only
The Pan-American Highway connects Alaska to Argentina, while the Trans-Siberian Highway spans the vast expanse of Russia from west to east. However, the Pan-American Highway is not a single, fully paved, uninterrupted route due to the Darien Gap. Despite this gap, both systems represent monumental infrastructural achievements that link multiple nations and diverse geographical zones across their respective continental landmasses.

15. (1) Prudhoe Bay and Ushuaia
The Pan-American Highway system is framed by two extreme terminal points that define its continental scale. In the north, it begins at Prudhoe Bay in Alaska, situated on the Arctic Ocean. In the south, the designated route terminates at Ushuaia in Argentina, which is often cited as the southernmost city in the world, located in the Tierra del Fuego region.

16. (2) A-iii, B-iv, C-ii, D-i
Global highway networks are defined by their specific regional connectivity and purpose. The Pan-American Highway links the three Americas, while the Trans-Siberian system spans from the Baltic to the Pacific. In Australia, the Stuart Highway connects the Northern Territory to South Australia. Meanwhile, the Trans-Canada Highway serves as a vital artery linking the Atlantic and Pacific coasts of Canada for national integration.

17. (2) Pipeline Gauge
Railway systems are categorized by the width between the inner sides of the two rails, known

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as the gauge. Standard classifications include broad gauge, standard gauge, meter gauge, and narrow gauge, each used for different operational requirements. The term pipeline gauge does not exist in transport geography, as pipelines are classified by their diameter and are a separate mode of transport entirely.

18. (1) III only
The Amazon Basin has extremely low railway density due to its dense tropical rainforest, difficult swampy terrain, and sparse population. Constructing railways in such environments presents immense engineering challenges and high costs that outweigh the economic benefits. In contrast, Europe has high density, North America focuses on freight, and African railways are primarily concentrated in the northern and southern extremities of the continent.

19. (3) Belgium
Belgium possesses the highest railway density in the world when measured against its total land area. This intensive network is a result of the country's early industrialization and its strategic position as a central transport hub in Western Europe. The compact geography combined with high population density and industrial activity necessitated a comprehensive rail system to facilitate the rapid movement of passengers and freight.

20. (4) Statement I is incorrect but Statement II is correct.
Interior regions of South America and Africa generally lack integrated continental railway networks. During the colonial era, rail lines were primarily constructed as penetration lines to transport extracted raw materials from specific interior sites directly to coastal ports for export. This extractive focus resulted in fragmented systems that failed to create internal connectivity between different regions within the continents.

21. (3) Is mostly concentrated in the eastern coastal regions.
The Australian railway network is heavily concentrated in the eastern and southeastern coastal regions, where the majority of the population and economic activity are located. Large parts of the central and western interior consist of arid deserts with very sparse infrastructure. While transcontinental lines exist, the density of the network diminishes significantly as one moves away from the fertile coastal plains.

22. (2) Moscow and Vladivostok
The Trans-Siberian Railway is the longest continuous rail line on Earth, serving as a vital link between European Russia and the Far East. Its main route runs from the capital city, Moscow, across the Ural Mountains and through the vastness of Siberia. It terminates at the strategic Pacific port of Vladivostok, facilitating the transcontinental movement of passengers and diverse industrial commodities.

23. (1) III, II, V, I, IV
The Trans-Siberian Railway follows a west-to-east trajectory starting from the capital city, Moscow. Traveling eastward, the line passes through Omsk in Western Siberia before reaching Irkutsk, located near Lake Baikal. Further east, it passes through the junction of Chita. Finally, the railway reaches its eastern terminus at the Pacific coastal city of Vladivostok, completing the journey across the Russian landmass.

24. (1) Tropical cash crops
The Trans-Siberian Railway is used to transport resources from Russia's interior, such as timber, coal, and minerals, to the industrial centers of Europe. It also carries machinery and manufactured goods between regions. Tropical cash crops are not a primary commodity on this route, as they are not native to the Siberian climate and are usually imported via maritime routes from southern regions.

25. (3) I, II and III
The Trans-Siberian Railway is a sophisticated, double-tracked, and fully electrified line that traverses diverse physical landscapes, including the Ural Mountains and major rivers like the Ob and Yenisei. It primarily serves the more populated southern fringe of Siberia. Crucially, the railway connects at Chita with the Trans-Manchurian line, which provides an alternative route through China toward the Pacific coast.

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26. (1) To link Siberian resources with European markets and frontiers.
The construction of the Trans-Siberian Railway was driven by the need to integrate the resource-rich Siberian territory with the European heartland of Russia. By providing a reliable transport link, the railway allowed for the extraction and export of vast timber and mineral wealth. It also served to strengthen administrative control over the distant eastern frontiers and facilitate settlement in underpopulated regions.

27. (4) The Trans-Mongolian Railway
At the station of Ulan Ude, the Trans-Siberian Railway connects with the Trans-Mongolian Railway. This branch line travels southward through Ulaanbaatar, the capital of Mongolia, and continues across the Gobi Desert to reach Beijing, China. This connection provides a vital international land bridge between Russia and China, facilitating trade and passenger travel between these two major global powers.

28. (2) To colonize the interior and link agriculture with industry.
The transcontinental railways of the 19th century were instrumental in opening the vast interior of North America to settlement and economic exploitation. These networks allowed for the large-scale colonization of the prairies, linking newly developed agricultural regions with the industrial centers of the east. This integration was essential for the growth of national markets and the efficient movement of grain and manufactured goods.

29. (3) A-ii, B-i, C-iii
North American transcontinental railways are defined by their major terminal cities. The Union Pacific connects Omaha to San Francisco, facilitating transcontinental travel in the US. In Canada, the Canadian Pacific Railway links the industrial hub of Montreal to the Pacific port of Vancouver. Meanwhile, the Canadian National Railway operates a northern route that extends from Halifax on the Atlantic to Prince Rupert.

30. (4) San Francisco
The Union Pacific Railway is a historic rail line that was part of the first transcontinental railroad in the United States. It begins in Omaha, Nebraska, and stretches westward across the Great Plains and the Rocky Mountains. The route concludes at San Francisco on the Pacific coast, serving as a vital artery for moving passengers and freight across the American west.

31. (4) I, II, III, IV and V
North America's rail system is a massive network crucial for moving long-distance bulk freight, such as coal and grain. Major lines like the Canadian Pacific and Union Pacific connect the Atlantic and Pacific coasts, ensuring economic integration of the continent's interior. These networks account for a large portion of global rail length and utilize the standard gauge system for efficiency.

32. (2) Passenger transport generates most of the railway revenue.
Unlike the rail networks in Europe or parts of Asia, North American railways are primarily oriented toward the transport of heavy, long-distance bulk freight. Commodities like coal, grain, and minerals provide the majority of the revenue for rail companies. While passenger services exist, they account for a relatively small fraction of total railway earnings compared to the dominant freight operations.

33. (2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
The Canadian Pacific Railway was built partly to fulfill a political pledge to British Columbia, ensuring its entry into the Canadian Confederation by providing a transcontinental link. Geographically, the line traverses the industrial heartland around Montreal and the vast agricultural prairies. While both statements are factually accurate, the railway's specific physical route through industrial zones is not the explanation for its political origin.

34. (1) United Kingdom and France
The Channel Tunnel, often called the Eurotunnel, is a major feat of modern engineering that consists of an underwater railway tunnel beneath the English Channel. It provides a direct, high-speed rail connection between the United Kingdom and France. By linking London to Paris and Brussels, it has significantly reduced travel time and increased the efficiency of cross-border passenger and freight transport.

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35. (3) I, II, IV and V
Europe boasts one of the world's most dense and advanced railway networks, featuring widespread electrification and high-speed rail systems like the French TGV. Unlike North America, passenger transport represents a very high proportion of total rail traffic. While many services are increasingly privatized, state involvement remains significant. This infrastructure supports intense urban connectivity across relatively short geographical distances between major centers.

36. (4) AVE - Spain
Different European nations have developed their own signature high-speed rail systems to facilitate rapid intercity travel. The AVE (Alta Velocidad Española) is the high-speed rail service operating in Spain. Other notable systems include the TGV in France and the ICE in Germany. These networks are designed to compete effectively with short-haul air travel by offering high speeds and convenient city-center terminals.

37. (1) Both A and R are true and R is the correct explanation of A.
Europe's exceptionally dense railway network is a direct consequence of its unique geography and socioeconomic history. High population density and the close proximity of major industrial cities create a massive demand for efficient transport over relatively short distances. To meet this demand, the region has invested heavily in extensive electrification and high-capacity rail lines, making it the most well-connected continent.

38. (2) Competition with short-haul flights between city centers.
High-speed rail systems in Europe have succeeded largely because they offer a competitive alternative to regional air travel. Because railway stations are typically located in city centers, they eliminate the long travel times and security procedures associated with airports. For distances between 300 and 800 kilometers, trains like the TGV or Eurostar provide faster, more convenient, and often more sustainable point-to-point transit.

39. (4) A-iii, B-i, C-ii, D-iv
Inland waterways are critical transport arteries globally. The St. Lawrence Seaway serves North America by connecting the Great Lakes to the Atlantic. The Rhine is Europe's busiest waterway, flowing through its industrial heartland. In Russia, the Volga provides a vital link to the Caspian Sea. Meanwhile, the Yangtze River acts as a massive commercial highway for China, supporting its dense interior.

40. (1) Atlantic Ocean
The Great Lakes - St. Lawrence Seaway is a sophisticated system of canals, locks, and rivers that allows ocean-going vessels to travel from the Atlantic Ocean deep into the heart of North America. It bypasses natural obstacles like Niagara Falls, linking the industrial and agricultural centers of the Midwest to global markets. This seaway is vital for the export of bulk goods.

41. (3) They are the most expensive mode of transport for bulky, low-value freight.
Inland waterways are actually the most cost-effective and energy-efficient mode of transport for moving heavy, bulky, and low-value commodities like coal, ore, and grain. Their high carrying capacity and low fuel consumption per ton-mile make them economically superior to road or rail for such cargo. However, their utility is limited by natural factors such as river depth and seasonal freezing.

42. (1) I, III, II
The Rhine Waterway is the world's most commercially important inland waterway due to its location in the industrial heart of Europe. The Volga River follows, serving as a major transport route for Russia's interior trade. Despite its massive size, the Amazon River ranks lower in commercial traffic because it flows through sparsely populated rainforests with minimal industrial activity and limited regional infrastructure.

43. (3) Statement I is correct but Statement II is incorrect.
Canals are man-made waterways designed for navigation, often interconnecting natural bodies of water. When a canal must cross uneven terrain or handle differences in water levels, the construction of locks is essential. Locks act as water elevators, raising or lowering vessels to match the elevation of the next section of the waterway. Without them, navigation across varying heights would be physically impossible.

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44. (1) Both A and R are true and R is the correct explanation of A.
The Rhine is recognized as the most heavily utilized inland waterway globally because it serves the most intensive industrial corridor in Europe. By connecting the coal and steel producing Ruhr region to the Port of Rotterdam, it facilitates the massive movement of raw materials and finished goods. This strategic alignment with high population density and advanced manufacturing ensures its continuous commercial traffic.

45. (3) Gulf of Mexico
The Mississippi River system, along with its major tributaries like the Ohio and Missouri rivers, forms a vast navigable network in the central United States. It primarily facilitates the southward movement of agricultural products and industrial goods toward the Gulf of Mexico. This route provides the US Midwest with an efficient water-borne link to international trade through ports like New Orleans.

46. (4) Italy
The Rhine River originates in the Swiss Alps and flows northward through several European countries, including Switzerland, Germany, and the Netherlands, before reaching the North Sea. It also forms a portion of the border between Germany and France. Italy, however, is located to the south of the Alps and is not part of the Rhine's drainage basin or its navigable transport network.

47. (1) It flows through sparsely populated, dense tropical rainforests with limited industrial activity.
While the Amazon River is naturally navigable for great distances, its commercial utility is hampered by the lack of economic development in its drainage basin. The river traverses vast, sparsely populated tropical rainforests where industrial production and large-scale consumer markets are absent. Without a productive hinterland to generate cargo and demand for imports, the waterway cannot achieve high global traffic volumes.

48. (2) A-iv, B-ii, C-iii, D-i
Major world rivers are characterized by their unique transport roles. The Rhine terminates at Rotterdam, serving as Europe's industrial lifeblood. The Mississippi links the US heartland to the Gulf of Mexico for bulk exports. The Amazon is navigable up to Manaus but lacks an industrial base. Finally, the Volga is a key Russian waterway that drains into the landlocked Caspian Sea.

49. (2) Rhine
The Ruhr industrial region in Germany is historically one of the world's most significant centers for coal mining and steel production. Its development was made possible by its proximity to the Rhine River and its network of canals. The Rhine provides the necessary high-capacity, low-cost transport for moving millions of tons of bulky raw materials and finished heavy industrial products.

50. (1) II only
The Suez Canal is a sea-level waterway that connects the Mediterranean and Red Seas, significantly shortening the maritime distance between Europe and Asia. Unlike the Panama Canal, it does not require a lock system because the terrain is predominantly flat and there is no significant difference in sea level between its two ends. This allows ships to transit continuously.

51. (3) Gatun Lake
The Panama Canal utilizes a series of locks to raise ships to the level of Gatun Lake, which sits 26 meters above sea level. This large artificial lake forms a central part of the canal's transit route across the Isthmus of Panama. By using the lake and the Culebra Cut, ships can cross the continental divide before being lowered to sea level.

52. (4) I, II and III
The Kiel Canal is a vital artificial waterway located in northern Germany. It connects the North Sea at Brunsbüttel to the Baltic Sea at Kiel. By providing a direct path, it allows ships to avoid the much longer and often hazardous voyage around the Jutland Peninsula of Denmark. This results in significant savings in time and fuel for maritime traffic.

53. (3) The terrain is flat and sea levels are approximately equal.
The Suez Canal was constructed as a sea-level canal because the topography of the Isthmus of

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Suez is remarkably low and flat. Furthermore, the water levels of the Mediterranean Sea and the Red Sea are nearly identical. These geographical factors eliminated the engineering necessity for a complex lock system, allowing for the creation of a continuous, open waterway for global shipping.

54. (2) A-ii, B-i, C-iv, D-iii
Strategic canals serve as vital links between major water bodies. The Suez Canal connects the Mediterranean and Red Seas, while the Panama Canal links the Atlantic and Pacific Oceans. In Europe, the Kiel Canal joins the North and Baltic Seas. Additionally, the Corinth Canal in Greece provides a narrow passage between the Gulf of Corinth and the Saronic Gulf.

55. (4) The Suez connects oceans while the Panama connects seas.
This statement is incorrect because the Panama Canal connects the Atlantic and Pacific Oceans, whereas the Suez Canal connects the Mediterranean Sea and the Red Sea. Both canals are critical global chokepoints that facilitate immense trade volumes. The Suez is a sea-level canal handling more traffic, while the Panama uses a lock system to traverse the higher elevation.

56. (1) It was nationalized by Egypt in 1956, leading to the Suez Crisis.
Originally opened in 1869 under French and later British control, the Suez Canal was a focal point of geopolitical tension. In 1956, Egyptian President Gamal Abdel Nasser nationalized the canal, asserting sovereign control over the waterway. This move led to the Suez Crisis, involving military intervention. Today, the canal is managed and operated solely by the Suez Canal Authority of Egypt.

57. (3) No capital cost for constructing or maintaining routes.
Unlike road and rail transport, which require massive investments in laying tracks or paving surfaces, the oceans provide natural, ready-made highways. There are no capital costs for constructing the routes themselves, and maintenance is not required for the open sea. Investment is only necessary for the vessels and the terminal infrastructure at ports, making maritime transport extremely economical.

58. (2) Atlantic Ocean, Pacific Ocean, Indian Ocean.
Historically, the North Atlantic Ocean has been the busiest maritime route, linking the highly industrialized economies of North America and Western Europe. As Asian economies have grown, the Pacific Ocean has become the second most active for trade. The Indian Ocean follows, serving as a vital corridor for energy resources from the Middleled East and connecting the Atlantic and Pacific oceans.

59. (2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
The opening of the Suez Canal led to a decline in traffic around the Cape of Good Hope as ships sought shorter routes. However, the Cape route remains essential for modern supertankers that are too large or have too deep a draft to pass through the Suez Canal. While both statements describe real trends, the continued use by supertankers is an operational necessity.

60. (4) I, II, III and IV
Global maritime trade is organized around several key transoceanic routes. The North Atlantic connects industrial Europe and North America, while the Mediterranean-Indian Ocean route links Europe to Asia. South Atlantic routes facilitate trade with South America, and North Pacific routes connect East Asia with the North American west coast. Together, these routes form the backbone of the global economy.

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61. (3) Strait of Hormuz
The Mediterranean-Indian Ocean route typically includes the Strait of Gibraltar, the Suez Canal, and the Bab el-Mandeb as its primary chokepoints. These facilitate travel from the Atlantic into the Indian Ocean. The Strait of Hormuz, while vital for global energy, is located at the entrance to the Persian Gulf and is not a direct part of the main transit route.

62. (4) IV only
The North Atlantic route primarily links Western Europe and Eastern North America, handling about one-fourth of the world's trade. It is not the primary route for transporting Middle Eastern oil to Japan; that trade predominantly uses the Indian and Pacific Oceans via the Strait of Malacca. The North Atlantic is characterized by

advanced port facilities and natural harbors that support trade.

63. (1) Links the two most industrially developed global regions.
The North Atlantic route's status as the busiest ocean trade lane is driven by the immense economic power of the regions it connects. Western Europe and North America are among the most industrially advanced and high-income areas in the world. This results in high demand for the exchange of manufactured goods, specialized technology, and raw materials, generating massive and consistent traffic.

64. (2) Singapore
New York, Rotterdam, and London are all major ports that sit directly on or serve as key terminals for the North Atlantic trade route, linking the US and Europe. Singapore, however, is a strategic hub in Southeast Asia. It serves as a gateway between the Indian and Pacific Oceans, catering primarily to trade routes connecting Asia with Europe and other nations.

65. (2) Gibraltar, Port Said, Aden, Mumbai
A vessel traveling from London to Mumbai first enters the Mediterranean through the Strait of Gibraltar. It then proceeds to the northern entrance of the Suez Canal at Port Said. After transiting the canal and the Red Sea, the ship passes the port of Aden near the Bab el-Mandeb strait. Finally, it crosses the Arabian Sea to reach Mumbai in India.

66. (1) North Atlantic Route
The Grand Banks of Newfoundland is a group of underwater plateaus southeast of Canada. This area is situated along the North Atlantic route, where the cold Labrador Current meets the warm Gulf Stream. These conditions create one of the world's richest fishing grounds. In addition to its biological significance, the region is a major geographical feature encountered by transatlantic shipping.

67. (3) A center where goods are imported, stored, and re-exported.
An Entrepot is a specialized port that acts as a central collection and distribution point for regional trade. Goods are imported from various sources, stored in warehouses, and eventually re-exported to other destinations, often after being processed or repackaged. These ports thrive by leveraging strategic locations along major shipping lanes, with Singapore and Rotterdam being classic examples of such maritime intermediaries.

68. (4) A-iii, B-iv, C-i, D-ii
Major global ports are defined by their strategic national and regional locations. Rotterdam serves as the primary gateway for the Netherlands and much of Europe. Singapore is a critical hub for Southeast Asia, overseeing the Malacca Strait. Shanghai is China's leading port at the mouth of the Yangtze, while Mumbai serves as a vital maritime gateway for India's western coast.

69. (3) Mumbai - Primarily a riverine port situated deep inland.
This statement is incorrect because Mumbai is a natural deep-water seaport situated on the Arabian Sea, not a riverine port located deep inland. It features a large, sheltered harbor that makes it India's premier maritime gateway. In contrast, Rotterdam is a riverine port at the mouth of the Rhine, and Shanghai is located where the Yangtze meets the sea.

70. (2) I, II, III and IV
Singapore is one of the world's most significant ports, located at a strategic maritime crossroads between the Indian Ocean and the South China Sea. It sits at the southern tip of the Malay Peninsula and commands the Strait of Malacca. As a leading entrepot, it specializes in transshipment, meaning it handles a vast amount of international freight between diverse vessels.

71. (4) The inland area generating cargo and buying port imports.
The hinterland is the terrestrial region that is served by a port for both its export and import needs. The economic success of a port is directly tied to the size and productivity of this area, as it provides the goods to be shipped out and consumes the commodities brought in. A well-connected hinterland allows a port to expand its commercial influence.

72. (1) United States
The United States possesses the world's most highly developed and utilized domestic air

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transport network. This dominance is driven by the country's vast geographical size, high level of economic development, and a culture of mobility. Major hubs facilitate thousands of daily flights, connecting hundreds of cities. This internal network accounts for a significant portion of the total global domestic volume.

73. (3) V only
Air transport is the fastest mode for high-value, perishable, or urgent goods, but it is not cost-effective for heavy bulk commodities like coal or iron ore. The high fuel costs and limited weight capacity of aircraft make them unsuitable for such low-value, high-volume items. These bulk materials are almost exclusively moved by sea or rail, where costs are lower.

74. (1) Major hubs like Dubai and Atlanta facilitate transfers.
Modern air travel is organized around a hub-and-spoke system where major airports act as central nodes for connecting flights. Hubs like Dubai International and Hartsfield-Jackson Atlanta facilitate the transfer of millions of passengers and tons of freight between diverse international and domestic destinations. This system optimizes aircraft usage and provides travelers with access to a comprehensive global aviation network.

75. (4) Port of Rotterdam
London Heathrow, Hartsfield-Jackson Atlanta, and Dubai International are all globally renowned airports that serve as primary hubs for air transport and passenger transit. The Port of Rotterdam, however, is a maritime facility. It is one of the world's largest seaports and serves as a critical node for ocean-going freight and inland waterway transport, belonging to a different infrastructure category.

76. (2) Crude oil, petroleum products, and natural gas.
Pipeline networks are specialized infrastructure designed for the efficient, continuous transport of fluids. Globally, they are most extensively used for moving crude oil from extraction sites to refineries, and for distributing petroleum products and natural gas to consumers. Their ability to cross difficult terrains and provide an uninterrupted supply makes them the preferred choice for the energy sector over long distances.

77. (1) Both A and R are true and R is the correct explanation of A.
Pipelines require a massive initial investment for construction, making them highly capital-intensive. However, once operational, they are extremely cost-effective because they eliminate the need for fuel, drivers, and return journeys. They provide a continuous, weather-independent flow of goods with minimal maintenance, leading to very low operating costs per unit of volume transported over their long lifespan in the field.

78. (3) Statement I is correct but Statement II is incorrect.
The Big Inch is a famous 24-inch diameter pipeline built in the United States during World War II. It was designed to transport crude oil from the oil fields of Texas to refineries on the East Coast to ensure a secure energy supply. It was never intended for, nor is it physically used for, the transport of milk products.

79. (1) Transport capacity in a pipeline can be easily and immediately increased beyond its physical diameter limits during peak demand.
A pipeline's maximum capacity is fundamentally constrained by its physical diameter and the pressure it can safely withstand. Unlike road or rail transport, where more vehicles can be added to handle peak demand, a pipeline cannot be easily scaled up once it is laid. Increasing throughput beyond design limits is impossible without constructing parallel lines. Pipelines ensure a continuous supply of energy resources.

80. (2) A-iii, B-i, C-iv, D-ii
Pipeline networks are critical infrastructure in major energy regions. The Big Inch is a historic American pipeline. The Trans-Arabian Pipeline is a major route in the Middle East. The Druzhba pipeline connects Russia to Eastern Europe. In India, the HVJ pipeline is a vital artery for transporting natural gas from western offshore fields to the northern industrial heartland of the country.

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CHAPTER 07

Environmental Issues : Desertification, Deforestation, Climate Change and Ozone Depletion

1. Which of the following best defines "desertification" according to the United Nations Convention to Combat Desertification (UNCCD)?
(1) Expansion of existing deserts into neighbouring areas due to long-term tectonic plate shifts.
(2) Land degradation in drylands resulting from climatic variations and various human activities.
(3) Deforestation in tropical rainforests causing the formation of unproductive barren landscapes.
(4) Encroachment of sand dunes over agricultural lands caused by localized severe wind erosion.
(5) Question not attempted

2. Which greenhouse gas is the most abundant in the Earth's atmosphere and acts primarily as a climate feedback mechanism rather than a direct initial climate forcing agent?
(1) Water vapour
(2) Carbon dioxide
(3) Methane
(4) Nitrous oxide
(5) Question not attempted

3. Consider the following statements regarding the Sahel region's geography and desertification:
Statement I: The Sahel is a semi-arid transition zone located between the Sahara Desert to the north and the Sudanian savanna to the south.
Statement II: Overgrazing, combined with population pressure and variable rainfall, is a primary anthropogenic cause of desertification in the Sahel.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

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4. Identify the odd one out among the following typical causes of deforestation globally.
(1) Expansion of commercial agriculture
(2) Extensive selective logging operations
(3) Rapid urbanisation and infrastructure expansion
(4) Implementation of agroforestry systems
(5) Question not attempted

5. Consider the following statements regarding the United Nations Convention to Combat Desertification (UNCCD):
I. It is the sole legally binding international agreement linking environment and development to sustainable land management.
II. It was adopted in 1994 and focuses heavily on the arid, semi-arid, and dry sub-humid areas where some of the most vulnerable ecosystems exist.
III. The Great Green Wall initiative is completely independent of the UNCCD framework and objectives.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

6. The protective ozone layer, which absorbs most of the Sun's harmful ultraviolet radiation, is primarily located in which region of the atmosphere?
(1) Troposphere
(2) Stratosphere
(3) Mesosphere
(4) Thermosphere
(5) Question not attempted

7. All of the following are considered natural drivers of long-term climate change EXCEPT:
(1) Variations in Earth's orbital parameters (Milankovitch cycles)
(2) Large-scale volcanic eruptions
(3) Fluctuations in solar output
(4) Widespread land-use changes and deforestation
(5) Question not attempted

8. Consider the following statements regarding Amazon deforestation:
I. The Amazon basin contains the largest remaining area of tropical rainforest in the world.
II. Cattle ranching and soy cultivation are among the leading primary drivers of deforestation in the region.
III. Deforestation in the Amazon reduces its capacity to function as a global carbon sink.
IV. The loss of Amazonian tree cover has no significant impact on regional evapotranspiration and rainfall patterns.
V. Scientists warn that continued deforestation could push the Amazon past a tipping point, turning it into a savanna.
Which of the above statement(s) is/are correct?
(1) I, II, III and V only
(2) I, II, IV and V only
(3) II, III, IV and V only
(4) I, III, IV and V only
(5) Question not attempted

9. Which of the following statements accurately describes the primary role of the Intergovernmental Panel on Climate Change (IPCC)?
(1) It commissions universities to perform specific atmospheric experiments on global climate trends.
(2) It acts as a global regulatory authority that enforces greenhouse gas emission limits on states.
(3) It assesses scientific and technical information relevant to understanding human-induced climate change.
(4) It manages financial assistance for developing countries regarding climate change mitigation projects.
(5) Question not attempted

10. Match List-I with List-II:
List I: (Greenhouse Gas)
A. Carbon dioxide
B. Methane
C. Nitrous oxide
D. Chlorofluorocarbons
List II: (Major Anthropogenic Source)
i. Enteric fermentation in livestock
ii. Synthetic refrigerants and propellants
iii. Fossil fuel combustion
iv. Application of nitrogen-based agricultural fertilizers
Select the correct answer from the codes given below:
(1) A-iii, B-i, C-iv, D-ii
(2) A-iii, B-iv, C-i, D-ii
(3) A-i, B-iii, C-iv, D-ii
(4) A-ii, B-i, C-iii, D-iv
(5) Question not attempted

11. What is the primary cause of the current global sea-level rise directly linked to global warming?
(1) Increased frequency and intensity of global rainfall events over the major ocean basins.
(2) Widespread melting of floating sea ice across the Arctic and Southern Antarctic Oceans.
(3) Subduction of tectonic plates reducing the total volume available for ocean water storage.
(4) Thermal expansion of seawater combined with the melting of land-based glaciers and ice.
(5) Question not attempted

12. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The ozone hole is most prominently observed over Antarctica during its spring season.
Reason (R): Polar stratospheric clouds form

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during the extremely cold winter, providing surfaces for chemical reactions that release ozone-depleting reactive chlorine.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

13. Which of the following best describes the core objective of the Great Green Wall initiative?
(1) To construct a physical concrete barrier across North Africa to block major sandstorms.
(2) To establish an exclusive economic zone across Sub-Saharan Africa for timber exportation.
(3) To restore degraded landscapes and combat desertification across the Sahel via sustainable management.
(4) To build a massive network of irrigation canals linking the Nile to the central Atlantic.
(5) Question not attempted

14. Which of the following pairs concerning the consequences of deforestation is correctly matched?
(1) Increased soil erosion - Trees increase the impact of raindrops on soil, loosening it.
(2) Biodiversity loss - Deforestation expands habitat availability for endemic species.
(3) Disruption of water cycle - Deforestation leads to higher rates of local evapotranspiration and increased rainfall.
(4) Carbon release - Decaying or burning cleared vegetation releases stored atmospheric CO_2.
(5) Question not attempted

15. Consider the following statements regarding the Paris Agreement:
I. It aims to hold the increase in the global average temperature to well below 2.0 degrees Celsius above pre-industrial levels.
II. It requires all signatory countries to pursue efforts to limit the temperature increase to 1.5 degrees Celsius.
III. It enforces top-down, legally binding emission reduction targets imposed by the UN on all member states.
IV. It relies on Nationally Determined Contributions (NDCs) submitted by individual countries.
Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) I, II and III
(3) II, III and IV
(4) I, III and IV
(5) Question not attempted

16. Globally, which region is currently experiencing the highest absolute rate of tropical deforestation?
(1) The Boreal forests of Siberia
(2) The Amazon Basin in South America
(3) The temperate forests of North America
(4) The Black Forest in Europe
(5) Question not attempted

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17. Consider the following statements regarding the causes of desertification:
Statement I: Improper irrigation practices in arid and semi-arid regions can lead to waterlogging and severe soil salinization.
Statement II: The accumulation of salts in the topsoil makes it unviable for agriculture, thereby accelerating the process of desertification.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

18. How does the melting of Arctic ice contribute to a positive feedback loop in global climate change?
(1) Exposed dark ocean water has a lower albedo, absorbing more radiation and accelerating warming.
(2) Melting ice absorbs more carbon dioxide from the atmosphere, effectively cooling the planet.
(3) Melting ice releases trapped ozone into the

troposphere, which reflects incoming solar radiation.
(4) Melting ice increases global ocean salinity, which slows down the process of thermal expansion.
(5) Question not attempted

19. Which of the following is NOT considered a greenhouse gas?
(1) Methane (CH_4)
(2) Nitrous oxide (N_2O)
(3) Nitrogen (N2)
(4) Carbon dioxide (CO_2)
(5) Question not attempted

20. Match List-I with List-II:
List I: (International Protocol/Agreement)
A. Montreal Protocol
B. Kyoto Protocol
C. Paris Agreement
D. UNCCD
List II: (Primary Focus Area)
i. Bottom-up approach for climate action via NDCs
ii. Phasing out of Ozone Depleting Substances
iii. Combating land degradation and desertification
iv. Legally binding emission targets for developed nations
Select the correct answer from the codes given below:
(1) A-ii, B-iv, C-i, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-iv, B-ii, C-iii, D-i
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

21. When a forest is cleared for agriculture, a significant amount of carbon is released into the atmosphere. This carbon originates primarily from which two components of the forest ecosystem?
(1) The atmospheric air within the forest and the underlying bedrock
(2) The groundwater reserves and the herbaceous undergrowth
(3) The biomass of the trees and the organic matter in the soil
(4) The canopy leaves and the atmospheric aerosols
(5) Question not attempted

22. Which of the following represents the correct chronological sequence of the establishment or adoption of these major environmental milestones?
(1) Montreal Protocol, Establishment of IPCC, UNFCCC, Paris Agreement
(2) Establishment of IPCC, Montreal Protocol, UNFCCC, Paris Agreement
(3) UNFCCC, Montreal Protocol, Establishment of IPCC, Paris Agreement
(4) Montreal Protocol, UNFCCC, Establishment of IPCC, Paris Agreement
(5) Question not attempted

23. Identify the odd one out among the following typical consequences of unchecked global warming.
(1) Increased frequency of extreme weather events
(2) Shifts in agricultural growing seasons
(3) Coral bleaching due to ocean warming
(4) Expansion of glacial mass in the mid-latitudes
(5) Question not attempted

24. Deforestation leads to an immediate increase in soil erosion primarily because:
(1) Loss of root systems removes the soil's structural binding, increasing wind and water vulnerability.
(2) Deforestation alters the chemical composition of rain, making it acidic and dissolving topsoil layers.
(3) Absence of trees decreases surface albedo, which causes the soil to bake and crack severely.
(4) Machinery used for logging operations instantly pulverizes the underlying bedrock into fine sand.
(5) Question not attempted

25. Consider the following statements regarding the Sahel region's desertification:
I. The Sahel experiences a highly variable rainfall pattern that makes it naturally vulnerable to prolonged droughts.
II. Rapid population growth has led to over-cultivation, depleting soil nutrients.
III. The region is located entirely within the northern hemisphere.
Which of the above statement(s) is/are correct?

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(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

26. In which year was the Intergovernmental Panel on Climate Change (IPCC) established by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP)?
(1) 1972
(2) 1988
(3) 1992
(4) 1997
(5) Question not attempted

27. Which of the following statements about the ozone layer is INCORRECT?
(1) The thickness of the ozone layer is typically measured in Dobson Units (DU).
(2) Stratospheric ozone protects living organisms by absorbing biologically harmful ultraviolet (UV-B and UV-C) radiation.
(3) The natural formation and destruction of ozone in the stratosphere is a dynamic equilibrium known as the Chapman cycle.
(4) Ozone found in the troposphere at ground level is highly beneficial and directly protects human respiratory health.
(5) Question not attempted

28. Consider the following statements regarding the causes of desertification globally:
I. Overgrazing removes vegetative cover, exposing soil to wind and water erosion.
II. Deforestation for fuelwood is a significant driver of desertification in developing nations.
III. Sustainable crop rotation practices accelerate the rate of desertification.
IV. Improper irrigation can lead to salinization, making soils toxic to crops.
V. Prolonged natural droughts exacerbate human-induced land degradation.
Which of the above statement(s) is/are incorrect?
(1) I and V only
(2) III only
(3) II and IV only
(4) IV and V only
(5) Question not attempted

29. In the context of Rajasthan's Thar desert, which of the following is the most widespread physical process of land degradation leading to desertification?
(1) Water erosion due to heavy monsoonal runoff
(2) Soil salinization from sea-water intrusion
(3) Wind erosion and the shifting of sand dunes
(4) Glacial plucking and abrasion
(5) Question not attempted

30. Match List-I with List-II regarding the Intergovernmental Panel on Climate Change (IPCC) structure:
List I: (IPCC Body)
A. Working Group I
B. Working Group II
C. Working Group III
D. Task Force on National Greenhouse Gas Inventories
List II: (Primary Focus)
i. Impacts, Adaptation, and Vulnerability
ii. Mitigation of Climate Change
iii. The Physical Science Basis
iv. Methodologies for calculating GHG emissions and removals
Select the correct answer from the codes given below:
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

31. Water vapour is a highly potent greenhouse gas, yet it is not targeted by international climate mitigation treaties like the Paris Agreement. What is the most appropriate reason for this?
(1) Atmospheric concentrations are temperature-controlled, acting as a feedback rather than a forcing agent.
(2) Water vapour has an atmospheric lifetime of several centuries, making its mitigation technically impossible.
(3) Water vapour only traps incoming shortwave radiation and does not affect the outgoing longwave radiation.
(4) International climate treaties only govern gases that are emitted through specific industrial processes.
(5) Question not attempted

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32. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The Great Green Wall initiative was initially conceived as a literal contiguous wall of trees stretching across Africa.
Reason (R): It has since evolved into a broad mosaic of targeted sustainable land management, agroforestry, and restoration practices tailored to local conditions.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

33. The Kigali Amendment to the Montreal Protocol, adopted in 2016, specifically targets the phase-down of which group of substances due to their high Global Warming Potential?
(1) Chlorofluorocarbons (CFCs)
(2) Hydrofluorocarbons (HFCs)
(3) Hydrochlorofluorocarbons (HCFCs)
(4) Halons
(5) Question not attempted

34. Consider the following statements regarding deforestation causes:
Statement I: Shifting agriculture (slash-and-burn) has historically been a major driver of deforestation in tropical regions.
Statement II: Shifting agriculture is currently the only form of agriculture responsible for forest loss globally, while commercial agriculture has zero impact.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

35. Consider the following statements regarding the impacts of global warming:
I. Warmer temperatures are causing mountain glaciers worldwide to retreat.
II. Global warming is increasing the acidification of the oceans.
III. Higher temperatures decrease the moisture-holding capacity of the atmosphere, reducing total global precipitation.
IV. Changes in climate can alter the distribution of vector-borne diseases.
Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) I, II and III
(3) II, III and IV
(4) I, III and IV
(5) Question not attempted

36. Which of the following is NOT a feature of the Paris Agreement on Climate Change?
(1) It operates on a five-year cycle of increasingly ambitious climate action.
(2) It establishes a global goal on adaptation to enhance adaptive capacity.
(3) It includes a framework for financial, technical, and capacity-building support to developing countries.
(4) It mandates immediate economic sanctions for countries that fail to meet their NDCs.
(5) Question not attempted

37. Which of the following pairs concerning the primary natural sources of greenhouse gases is correctly matched?
(1) Carbon dioxide - Denitrification in soils
(2) Photochemical reactions in the stratosphere - Nitrous oxide
(3) Methane - Anaerobic decomposition in natural wetlands
(4) Water vapour - Volcanic outgassing strictly
(5) Question not attempted

38. Identify the odd one out among the following substances based on their role in environmental issues.
(1) Chlorofluorocarbons (CFCs)
(2) Sulfur dioxide
(3) Halons
(4) Carbon tetrachloride
(5) Question not attempted

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39. Excessive use of irrigation in arid regions with poor drainage systems primarily leads to which long-term effect?
(1) Increase in local biodiversity
(2) Formation of natural freshwater wetlands
(3) Rapid afforestation of the surrounding landscape
(4) Soil salinization and subsequent desertification
(5) Question not attempted

40. Match List-I with List-II concerning the major regions affected by deforestation and their primary drivers:
List I: (Region)
A. Amazon Basin
B. Southeast Asia
C. Sub-Saharan Africa
D. Boreal Forests (Russia/Canada)
List II: (Primary Driver)
i. Commercial logging and wood-based industries
ii. Cattle ranching and large-scale agriculture (soy)
iii. Palm oil plantations
iv. Subsistence farming and fuelwood collection
Select the correct answer from the codes given below:
(1) A-ii, B-iii, C-iv, D-i
(2) A-iii, B-ii, C-iv, D-i
(3) A-ii, B-iv, C-iii, D-i
(4) A-i, B-iii, C-iv, D-ii
(5) Question not attempted

41. In which year did the United Nations Convention to Combat Desertification (UNCCD) formally enter into force?
(1) 1992
(2) 1994
(3) 1996
(4) 1998
(5) Question not attempted

42. Arrange the following greenhouse gases in ascending order based on their Global Warming Potential (GWP) over a 100-year period relative to CO_2:
I. Methane (CH_4)
II. Carbon dioxide (CO_2)
III. Nitrous oxide (N_2O)
IV. Chlorofluorocarbon-12 (CFC-12)
Select the correct sequence:
(1) I, II, III, IV
(2) II, I, III, IV
(3) II, III, I, IV
(4) III, II, I, IV
(5) Question not attempted

43. Which of the following statements regarding the global significance of Amazon deforestation is correct?
(1) Deforestation strictly increases carbon sink capacity through the growth of secondary vegetation.
(2) Deforestation in the Amazon solely affects local temperatures without impacting global weather.
(3) The Amazon rainforest naturally recovers from major clear-cutting within a period of 2 to 3 years.
(4) The Amazon holds about 10% of global biodiversity, which is severely threatened by habitat loss.
(5) Question not attempted

44. Under the Paris Agreement framework, what does the term "Nationally Determined Contributions" (NDCs) represent?
(1) Compulsory financial quotas each nation must pay annually to the Green Climate Fund.
(2) Climate action plans and emission reduction targets self-defined by each participating country.
(3) Fixed amounts of carbon credits assigned to developing nations at the start of each cycle.
(4) Historical responsibilities calculated for developed nations based on cumulative past emissions.
(5) Question not attempted

45. Consider the following statements regarding the consequences of deforestation:
I. It disrupts the local hydrological cycle, often leading to reduced precipitation in the area.
II. It increases the albedo of the cleared land, affecting local energy balances.
III. It results in an immediate increase in the amount of organic carbon securely stored in the soil.
Which of the above statement(s) is/are correct?

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(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

46. What is the chemical formula of stratospheric ozone, and how is it naturally formed?
(1) O_2; formed when UV light breaks down carbon dioxide into oxygen atoms and carbon.
(2) O_3; formed when lightning strikes near the surface and rises up to the stratosphere.
(3) O_4; formed by the fusion of two diatomic oxygen molecules under extreme atmospheric pressure.
(4) O_3; formed when UV light splits O_2 molecules, which then combine with unbroken O_2.
(5) Question not attempted

47. Consider the following statements regarding climate change feedbacks:
Statement I: As global temperatures rise, permafrost in the Arctic regions begins to thaw.
Statement II: Thawing permafrost primarily absorbs methane from the atmosphere, creating a negative feedback loop that cools the planet.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

48. Consider the following statements based on the key findings of recent IPCC reports:
I. Human activities are unequivocally responsible for the observed warming of the atmosphere, ocean, and land.
II. Global surface temperature will continue to increase until at least mid-century under all assessed emission scenarios.
III. Limiting human-induced global warming requires achieving at least net zero CO_2 emissions.
IV. Climate change is already affecting many weather and climate extremes in every region across the globe.
V. Sea level rise is predicted to completely reverse and drop to pre-industrial levels by 2100.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) V only
(3) III and IV only
(4) IV and V only
(5) Question not attempted

49. Which of the following is NOT an effective strategy for combating desertification?
(1) Implementing agroforestry and planting shelterbelts
(2) Promoting intensive monoculture farming without fallow periods
(3) Constructing terraced fields to slow surface water runoff
(4) Encouraging rotational grazing of livestock
(5) Question not attempted

50. Match List-I with List-II concerning global environmental treaties and their adoption years:
List I: (Treaty/Agreement)
A. UNFCCC
B. UNCCD
C. Montreal Protocol
D. Paris Agreement
List II: (Adoption Year)
i. 1987
ii. 1992
iii. 1994
iv. 2015
Select the correct answer from the codes given below:
(1) A-ii, B-iii, C-i, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iii, B-ii, C-i, D-iv
(5) Question not attempted

51. Which of the following represents the most accurate description of how the Intergovernmental Panel on Climate Change (IPCC) develops its assessment reports?
(1) It commissions global universities to perform specific atmospheric experiments on phenomena.
(2) It relies solely on data collected from its own

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independent network of satellite monitors.
(3) It synthesizes published scientific papers to summarize climate drivers and potential impacts.
(4) It uses public polling methods to determine the consensus on climate change policy.
(5) Question not attempted

52. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Widespread deforestation in the Amazon basin can lead to a significant decline in regional rainfall.
Reason (R): Deforestation reduces the number of trees available to undergo evapotranspiration, thereby cutting off a crucial source of moisture for the atmosphere.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

53. Which of the following statements regarding greenhouse gases is INCORRECT?
(1) Carbon dioxide is the primary greenhouse gas emitted through human activities.
(2) Methane has a shorter atmospheric lifetime than carbon dioxide but is more efficient at trapping radiation per molecule.
(3) Nitrous oxide emissions are predominantly associated with the cooling systems of older refrigerators.
(4) The concentration of greenhouse gases in the atmosphere is directly linked to the average global temperature on Earth.
(5) Question not attempted

54. In the context of the Sahel region desertification, which practice is recognized as the major historical anthropogenic driver of land degradation?
(1) Large-scale open-pit mining
(2) Overgrazing by nomadic livestock herds
(3) Extensive dam construction on the major rivers
(4) Industrial pollution from rapidly growing mega-cities
(5) Question not attempted

55. Consider the following statements regarding ozone depletion:
I. Ozone depletion is most severe over the Arctic region compared to the Antarctic.
II. Polar stratospheric clouds play a crucial role in providing a surface for chemical reactions that lead to ozone destruction.
III. The Montreal Protocol has been universally ratified to phase out ozone-depleting substances.
IV. The ozone hole peaks during the southern hemisphere's spring season.
Which of the above statement(s) is/are correct?
(1) I, II and III
(2) II, III and IV
(3) I, III and IV
(4) I, II and IV
(5) Question not attempted

56. Identify the odd one out concerning major natural carbon sinks on Earth.
(1) Expanding urban heat islands
(2) The global oceans
(3) Intact tropical and boreal forests
(4) Peatlands and wetlands
(5) Question not attempted

57. Increased levels of dissolved carbon dioxide in the Earth's oceans primarily lead to which chemical effect?
(1) An increase in ocean alkalinity
(2) The rapid precipitation of calcium carbonate from seawater
(3) A decrease in ocean pH, causing ocean acidification
(4) An increase in the oxygen saturation of surface waters
(5) Question not attempted

58. Which of the following pairs concerning the indicators of desertification is correctly matched?
(1) Physical indicator - Decline in groundwater table
(2) Biological indicator - Increase in soil salinity
(3) Social indicator - Shift in the floristic composition of pastures
(4) Chemical indicator - Outmigration of rural

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populations
(5) Question not attempted

59. The 'Suess Effect' is often cited as evidence of anthropogenic climate change. What does this effect specifically demonstrate?
(1) Rapid melting of Greenland's ice sheets caused by rising surface temperatures.
(2) Expansion of the Hadley cell towards the poles due to greenhouse gas forcing.
(3) Delayed warming of the deep oceans compared to the atmosphere and surface.
(4) Change in atmospheric carbon isotope ratios, proving the CO_2 is from fossil fuels.
(5) Question not attempted

60. Match List-I with List-II concerning environmental terms:
List I: (Action)
A. Afforestation
B. Reforestation
C. Deforestation
D. Desertification
List II: (Definition)
i. The clearing of forest areas for non-forest land uses
ii. Land degradation in arid, semi-arid, and dry sub-humid areas
iii. Planting trees in an area that was not previously forested
iv. Replanting trees in an area where a forest was recently cleared
Select the correct answer from the codes given below:
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-i, D-ii
(3) A-iii, B-iv, C-ii, D-i
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

61. The Great Green Wall initiative is fundamentally associated with which continent?
(1) Asia
(2) South America
(3) Africa
(4) Australia
(5) Question not attempted

62. Which of the following represents the correct chronological stages of the global response to ozone depletion?
(1) Adoption of Montreal Protocol, Discovery of the Antarctic Ozone Hole, Kigali Amendment
(2) Discovery of the Antarctic Ozone Hole, Adoption of Montreal Protocol, Kigali Amendment
(3) Discovery of the Antarctic Ozone Hole, Kigali Amendment, Adoption of Montreal Protocol
(4) Kigali Amendment, Discovery of the Antarctic Ozone Hole, Adoption of Montreal Protocol
(5) Question not attempted

63. Consider the following statements regarding the recovery status of the ozone layer:
Statement I: As a direct result of the Montreal Protocol, the stratospheric ozone layer is showing signs of recovery.
Statement II: The Antarctic ozone hole is projected to fully recover to 1980 levels within the next 5 years.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

64. All of the following activities are considered primary direct drivers of deforestation EXCEPT:
(1) Expansion of pasture for livestock grazing
(2) Sustainable harvesting of non-timber forest products (NTFPs)
(3) Large-scale monoculture agricultural plantations
(4) Unregulated commercial logging
(5) Question not attempted

65. Consider the following statements regarding the mechanisms of the Paris Agreement:
I. It includes a "Global Stocktake" every five years to assess collective progress toward its long-term goals.
II. Developing countries are explicitly prohibited from setting their own emission reduction targets.

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III. It establishes a framework for voluntary cooperation and market mechanisms (Article 6).

Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

66. In the context of global warming, what is the difference between eustatic and isostatic sea-level changes?
(1) Eustatic refers to ocean volume changes, while isostatic refers to land elevation changes.
(2) Eustatic refers to sea-level rise due to thermal expansion, whereas isostatic refers to glacier melt.
(3) Eustatic is caused by lunar gravity, whereas isostatic is caused by various anthropogenic factors.
(4) Both terms describe identical global phenomena caused by changing oceanic wind patterns.
(5) Question not attempted

67. According to recent Space Applications Centre (SAC) reports, approximately what percentage of the total geographical area of India is undergoing desertification/land degradation?
(1) Around 10%
(2) Around 20%
(3) Around 30%
(4) Around 50%
(5) Question not attempted

68. Consider the following statements regarding strategies to combat climate change:
I. Mitigation involves taking action to reduce the emissions that cause climate change.
II. Adaptation involves adjusting to actual or expected future climate impacts.
III. Carbon Capture and Storage (CCS) is a widely deployed adaptation strategy in developing countries.
IV. Enhancing natural carbon sinks through afforestation is considered a mitigation strategy.
V. The Paris Agreement requires all countries to implement identical mitigation technologies regardless of their economic status.

Which of the above statement(s) is/are correct?
(1) I, II and IV only
(2) I, III and V only
(3) II, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

69. Enteric fermentation is a major source of greenhouse gas emissions. This process is primarily associated with:
(1) The burning of leftover agricultural residues in large-scale crop fields.
(2) Anaerobic decomposition of various organic wastes in municipal landfills.
(3) Digestive processes of ruminant livestock such as cattle, producing methane.
(4) Chemical reactions occurring during the industrial manufacturing of cement.
(5) Question not attempted

70. Match List-I with List-II regarding the impacts of climate change on specific ecosystems:
List I: (Ecosystem)
A. Coral Reefs
B. Arctic Tundra
C. Tropical Rainforests
D. Coastal Mangroves
List II: (Specific Impact)
i. Widespread bleaching events due to thermal stress
ii. Accelerated permafrost thaw releasing trapped greenhouse gases
iii. Increased vulnerability to sea-level rise and coastal squeeze
iv. Heightened risk of desiccation and increased frequency of forest fires

Select the correct answer from the codes given below:
(1) A-i, B-ii, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-i, C-iv, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

71. Which component of anthropogenic activities provides the single largest positive contribution to global radiative forcing (warming effect) since pre-industrial times?
(1) Land-use changes leading to higher surface

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albedo
(2) The emission of aerosols and their precursors
(3) The production of synthetic fertilizers releasing nitrous oxide
(4) The atmospheric accumulation of carbon dioxide from fossil fuel combustion
(5) Question not attempted

72. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The Paris Agreement represented a shift from the rigid, top-down approach of the Kyoto Protocol to a more flexible, bottom-up approach.
Reason (R): Under the Paris Agreement, emission reduction targets (NDCs) are self-determined by each individual country based on their national circumstances.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

73. Which of the following statements concerning the global extent of deforestation is INCORRECT?
(1) Deforestation rates have historically been highest in tropical regions over the past few decades.
(2) Fragmentation of forests significantly reduces the habitat quality for interior forest species.
(3) The Boreal forests are entirely immune to human-induced deforestation and logging.
(4) Southeast Asia has lost significant forest cover primarily due to palm oil plantation expansion.
(5) Question not attempted

74. Identify the odd one out among the following regions/annexes regarding the implementation focus of the UNCCD.
(1) Antarctica
(2) Asia
(3) Latin America and the Caribbean
(4) Africa
(5) Question not attempted

75. Consider the following statements regarding the structure and function of the ozone layer:
I. It absorbs 97-99% of the Sun's medium-frequency ultraviolet light (UV-B).
II. Without the ozone layer, UV radiation would cause widespread genetic damage to living organisms.
III. The concentration of ozone in the stratosphere is uniform and constant throughout the year at all latitudes.
IV. Ozone molecules in the stratosphere undergo a continuous cycle of creation and destruction.
Which of the above statement(s) is/are correct?
(1) I, II and III
(2) I, II and IV
(3) II, III and IV
(4) I, III and IV
(5) Question not attempted

76. Approximately what percentage of the world's remaining tropical rainforests is contained within the Amazon Basin?
(1) 10%
(2) 20%
(3) 50%
(4) 90%
(5) Question not attempted

77. Consider the following statements regarding solar variability and climate change:
Statement I: Natural variations in solar irradiance are the primary cause of the rapid global warming observed since the mid-20th century.
Statement II: Satellite measurements over recent decades show no significant net increase in solar energy reaching the Earth, while surface temperatures have steadily risen.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.

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59. (4) Change in atmospheric carbon isotope ratios, proving the CO_2 is from fossil fuels.
The Suess Effect refers to the observed decline in the proportion of carbon-14 isotopes in atmospheric carbon dioxide. Because fossil fuels are millions of years old, they no longer contain carbon-14. When they are burned, the resulting CO_2 dilutes the natural atmospheric concentration of this isotope. This provide definitive proof that the recent increase in atmospheric CO_2 is caused by human activity.

60. (1) A-iii, B-iv, C-i, D-ii
These terms describe different processes related to land use and forest cover. Afforestation involves planting trees on land not recently forested, while reforestation is replanting in cleared areas. Deforestation refers to the removal of forests for other uses. Desertification is the degradation of land specifically in arid and semi-arid regions. Understanding these distinctions is fundamental for clear communication in environmental science.

61. (3) Africa.
The Great Green Wall is a flagship initiative specifically designed for the African continent. It aims to restore degraded landscapes across the Sahel region, stretching from Senegal in the west to Djibouti in the east. By promoting sustainable land management and reforestation, the project seeks to combat desertification and improve the livelihoods of millions of people living in these vulnerable areas.

62. (2) Discovery of the Antarctic Ozone Hole, Adoption of Montreal Protocol, Kigali Amendment.
Scientific concern peaked with the discovery of the Antarctic ozone hole in the mid-1980s. This finding prompted the international community to adopt the Montreal Protocol in 1987 to phase out ozone-depleting substances. Decades later, the 2016 Kigali Amendment was added to specifically address hydrofluorocarbons, which are potent greenhouse gases. This sequence illustrates how global policy evolves in response to new scientific evidence.

63. (3) Statement I is correct, but Statement II is incorrect.
Due to the success of the Montreal Protocol, stratospheric ozone levels are indeed beginning to recover. However, full recovery is a slow process because ozone-depleting substances have long atmospheric lifetimes. While progress is being made, the Antarctic ozone hole is not expected to return to its 1980 levels for several decades, likely around the middle of the 21st century.

64. (2) Sustainable harvesting of non-timber forest products (NTFPs).
Deforestation is primarily caused by large-scale activities that clear land, such as cattle ranching, industrial agriculture, and unregulated logging. In contrast, the sustainable harvesting of non-timber products, like fruits or resins, allows the forest canopy to remain intact. This practice provides economic value to standing forests, often serving as an incentive for conservation rather than a driver of forest loss.

65. (3) I and III only.
The Paris Agreement includes a "Global Stocktake" every five years to evaluate collective progress toward its climate goals. It also establishes frameworks for voluntary cooperation and market-based mechanisms. Importantly, the agreement is inclusive, allowing both developed and developing countries to set their own emission reduction targets. This flexibility is a key feature that encourages broad participation across all nations, regardless of economic status.

66. (1) Eustatic refers to ocean volume changes, while isostatic refers to land elevation changes.
Eustatic sea-level change occurs when the total volume of water in the ocean changes, such as through thermal expansion or the melting of glaciers. Isostatic change refers to the vertical movement of the land itself, which can be caused by tectonic shifts or the removal of heavy ice sheets. Both processes influence the observed relative sea level at any specific coastline.

67. (3) Around 30%.
Recent reports from the Space Applications Centre indicate that approximately 30% of India's total geographical area is affected by land degradation or desertification. This significant proportion highlights the scale of the challenge

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ANSWERS

1. (2) Land degradation in drylands resulting from climatic variations and various human activities
Desertification refers to the degradation of land in arid, semi-arid, and dry sub-humid areas. It results primarily from human activities such as overgrazing and deforestation, coupled with natural climate variations like prolonged droughts. This process reduces the biological or economic productivity of land, severely impacting food security and livelihoods in vulnerable ecosystems.

2. (1) Water vapour
Water vapour is the most prevalent greenhouse gas in the atmosphere. Unlike carbon dioxide, it acts as a feedback rather than a direct forcing agent. As the planet warms from other gases, the air holds more moisture, which further traps heat. This cycle amplifies the initial warming effect significantly within the complex global climate system.

3. (1) Both Statement I and Statement II are correct.
The Sahel serves as a critical transition zone between the Sahara Desert and southern savannas. It faces severe land degradation driven by anthropogenic factors like overgrazing and rising population pressure. These human influences, combined with highly unpredictable rainfall patterns, accelerate desertification processes. Understanding these dynamics is essential for implementing sustainable land management and restoration initiatives.

4. (4) Implementation of agroforestry systems
Deforestation is primarily driven by industrial agriculture, urban expansion, and large-scale logging operations. In contrast, agroforestry involves the intentional integration of trees into crop and livestock systems. This practice is a sustainable land management strategy that enhances biodiversity and sequester carbon. Therefore, it serves as a solution to forest loss rather than a contributing cause.

5. (1) I and II only
The United Nations Convention to Combat Desertification is a legally binding international agreement focusing on sustainable land management in drylands. Adopted in 1994, it targets vulnerable arid and semi-arid regions to improve ecosystem health. While the Great Green Wall is a major initiative, it aligns closely with the objectives and framework established by the convention.

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6. (2) Stratosphere
The stratosphere contains the highest concentration of ozone, forming a protective shield around the planet. This layer absorbs the majority of the Sun's harmful ultraviolet radiation, particularly UV-B rays. By filtering these rays, it prevents significant damage to living organisms and ecosystems. Its preservation remains a critical focus of international environmental agreements like the Montreal Protocol.

7. (4) Widespread land-use changes and deforestation
Long-term climate variations occur naturally through Milankovitch cycles, solar fluctuations, and volcanic activity. However, large-scale changes in land use and the removal of forests are anthropogenic drivers. These human activities release stored carbon and alter surface albedo, contributing to modern global warming. Distinguishing between natural cycles and human-induced impacts is vital for accurate climate modeling.

8. (1) I, II, III and V only
The Amazon basin represents the largest tropical forest, providing essential services like carbon sequestration and regional rainfall regulation through evapotranspiration. Major drivers include cattle ranching and soy cultivation. Continued loss of tree cover threatens a potential tipping point where the ecosystem transforms into a savanna. This shift would have catastrophic consequences for global biodiversity and climate stability.

marked a significant step in the global effort to understand and address human-induced climate change. Since then, the panel has provided critical scientific assessments that guide international policy and negotiations, including the development of the UNFCCC and subsequent agreements.

27. (4) Ozone found in the troposphere at ground level is highly beneficial and directly protects human respiratory health.
Stratospheric ozone is essential for life as it absorbs harmful ultraviolet radiation. However, ground-level or tropospheric ozone is a harmful pollutant and a key component of smog. It is produced by chemical reactions between sunlight and emissions from vehicles and industry. Exposure to this ozone can cause respiratory issues and damage vegetation, making it a significant environmental and health concern.

28. (2) III only.
Desertification is driven by unsustainable practices like overgrazing, deforestation for fuel, and improper irrigation leading to salinization. Conversely, sustainable crop rotation is a beneficial agricultural technique that helps maintain soil fertility and structure. It reduces the risk of land degradation rather than accelerating it. Therefore, promoting such sustainable methods is a key strategy in the global fight against encroaching desertification.

29. (3) Wind erosion and the shifting of sand dunes.
In the arid environment of western Rajasthan, wind is the dominant agent of land degradation. The lack of dense vegetation allows strong winds to transport loose soil and sand, leading to the movement of sand dunes. This process can bury fertile agricultural land and infrastructure, significantly contributing to desertification. Stabilization efforts often focus on using biological barriers to reduce wind velocity.

30. (1) A-iii, B-i, C-ii, D-iv
The Intergovernmental Panel on Climate Change is organized into specific groups to manage complex scientific information. Working Group I focuses on the physical science basis, while Group II examines impacts and adaptation strategies. Mitigation efforts are the domain of Working Group III. Finally, a specialized task force develops methodologies for calculating and reporting national greenhouse gas emissions and removals globally.

31. (1) Atmospheric concentrations are temperature-controlled, acting as a feedback rather than a forcing agent.
Water vapour is a powerful greenhouse gas, but its concentration is determined by atmospheric temperature rather than direct human emissions. As other gases cause warming, the air holds more water, amplifying the effect. Because humans do not control water vapour levels directly through industrial policy, mitigation treaties focus on forcing agents like carbon dioxide and methane, which drive the initial warming.

32. (2) Both A and R are true but R is not the correct explanation of A.
The Great Green Wall was originally imagined as a continuous forest strip across Africa. Over time, the concept shifted toward a more integrated approach involving diverse restoration and sustainable management practices. This evolution reflects a growing understanding that local ecological and social conditions require tailored solutions. While both statements accurately describe the project's history and current form, the evolution is a logical progression.

33. (2) Hydrofluorocarbons (HFCs).
The Kigali Amendment specifically addresses hydrofluorocarbons, which were introduced as ozone-friendly alternatives to chlorofluorocarbons. Although they do not deplete the ozone layer, they are extremely potent greenhouse gases with high global warming potential. By phasing down their use, the international community aims to avoid significant future warming. This amendment represents a crucial expansion of the Montreal Protocol's environmental scope and impact.

34. (3) Statement I is correct, but Statement II is incorrect.
Historically, shifting agriculture has contributed to forest loss in many tropical areas. However, it is not the only cause; modern commercial agriculture, including cattle ranching and large-scale plantations, now represents a dominant driver of global deforestation. Attributing forest loss solely to subsistence practices overlooks

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land becomes barren, accelerating the broader process of desertification. Sustainable water management is therefore critical for preventing permanent land degradation in arid regions.

18. (1) Exposed dark ocean water has a lower albedo, absorbing more radiation and accelerating warming.
The melting of Arctic sea ice reduces the Earth's albedo, which is the reflectivity of the surface. White ice reflects sunlight, but dark open water absorbs more solar energy, leading to further warming. This additional heat causes more ice to melt, creating a self-reinforcing positive feedback loop. This mechanism significantly accelerates the rate of warming in polar regions.

19. (3) Nitrogen (N2)
Greenhouse gases are characterized by their ability to absorb and emit infrared radiation, trapping heat in the atmosphere. Common examples include carbon dioxide, methane, and nitrous oxide. Nitrogen, which makes up about 78% of the atmosphere, does not have this property due to its simple diatomic structure. Therefore, it does not contribute directly to the greenhouse effect or global warming.

20. (1) A-ii, B-iv, C-i, D-iii
The Montreal Protocol addresses ozone depletion, while the Kyoto Protocol established binding targets for developed nations. The Paris Agreement introduced a bottom-up approach through self-determined contributions. The United Nations Convention to Combat Desertification focuses on land degradation. Understanding these different frameworks is essential for recognizing how the international community addresses diverse environmental challenges through specialized legal and cooperative mechanisms.

21. (3) The biomass of the trees and the organic matter in the soil.
Forest ecosystems store carbon primarily in living biomass, including trunks, branches, and roots, and in the organic matter of the soil. When land is cleared for agriculture, these stores are disturbed. Burning vegetation releases carbon instantly, while soil disturbance leads to the decomposition of organic matter. These processes contribute significantly to the overall atmospheric concentration of carbon dioxide.

22. (1) Montreal Protocol, Establishment of IPCC, UNFCCC, Paris Agreement.
Environmental governance evolved through several key milestones starting with the 1987 Montreal Protocol. The Intergovernmental Panel on Climate Change followed in 1988 to assess climate science. The United Nations Framework Convention on Climate Change was then adopted in 1992 at the Rio Earth Summit. Finally, the Paris Agreement was established in 2015, representing the modern era of climate action.

23. (4) Expansion of glacial mass in the mid-latitudes.
Global warming is characterized by rising temperatures that cause mountain glaciers to retreat and sea levels to rise. It also triggers more frequent extreme weather and coral bleaching. The expansion of glacial mass is contrary to observed warming trends, as higher temperatures generally lead to increased melting. Understanding these impacts is crucial for assessing the risks posed by unchecked climate change.

24. (1) Loss of root systems removes the soil's structural binding, increasing wind and water vulnerability.
Trees play a vital role in stabilizing soil through their extensive root systems, which bind soil particles together. When forests are cleared, this physical support is lost, making the ground highly susceptible to erosion by wind and rain. Additionally, the removal of the canopy exposes the soil surface to direct impact from raindrops, further accelerating the degradation process.

25. (4) I, II and III
The Sahel is located in the northern hemisphere and experiences natural climate variability that makes it prone to drought. Human factors, such as over-cultivation driven by population growth, exacerbate these vulnerabilities by depleting soil health. This combination of physical and anthropogenic stressors leads to widespread land degradation. Addressing these issues requires integrated strategies that consider both environmental and social dynamics.

26. (2) 1988.
The Intergovernmental Panel on Climate Change was founded in 1988 through the joint efforts of two United Nations bodies. Its creation

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(5) Question not attempted

78. Arrange the following sequence of events that characterize the process of ozone depletion over Antarctica in chronological order during the polar winter and spring:

I. Formation of the polar vortex, isolating Antarctic air

II. Extreme cooling of the stratosphere leading to the formation of Polar Stratospheric Clouds (PSCs)

III. Return of sunlight in spring, triggering rapid chemical destruction of ozone

IV. Inactive chlorine compounds accumulate on the surface of PSCs

Select the correct order:

(1) I, II, IV, III
(2) II, I, IV, III
(3) I, IV, II, III
(4) IV, I, II, III
(5) Question not attempted

79. In regions like western Rajasthan, attempting to combat desertification caused by shifting sand dunes often involves:

(1) Stabilization through planting of indigenous drought-resistant shrubs.
(2) Extensive canal irrigation to flood the dunes with freshwater.
(3) Complete removal of the sand using heavy industrial machinery.
(4) Encouraging intensive cattle grazing to compact the loose sand.
(5) Question not attempted

80. Match List-I with List-II concerning global environmental initiatives:

List I: (Initiative/Mechanism)

A. REDD+
B. Bonn Challenge
C. Great Green Wall
D. Clean Development Mechanism (CDM)

List II: (Core Objective)

i. A global effort to bring degraded and deforested land into restoration

ii. Creating financial value for the carbon stored in forests to incentivize conservation

iii. A legacy mechanism of the Kyoto Protocol allowing emission-reduction projects in developing countries

iv. An African-led movement to combat desertification in the Sahel

Select the correct answer from the codes given below:

(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

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the significant impact of industrial-scale land conversion. Both small-scale and large-scale agricultural activities influence global forest trends.

35. (1) I, II and IV
Rising temperatures cause mountain glaciers to retreat and alter the distribution of diseases. Additionally, increased atmospheric carbon dioxide leads to ocean acidification. Contrary to common misconceptions, warmer air actually has a higher moisture-holding capacity, which generally increases total global precipitation, although patterns become more extreme and variable. Understanding these diverse impacts is essential for developing effective adaptation and resilience strategies.

36. (4) It mandates immediate economic sanctions for countries that fail to meet their NDCs.
The Paris Agreement relies on a system of transparency, collective progress reviews, and voluntary national commitments. It does not include a mechanism for imposing economic sanctions or legal penalties on countries that miss their targets. Instead, it emphasizes international cooperation, financial support for developing nations, and a five-year cycle of increasing ambition to drive global climate action and emissions reduction.

37. (3) Methane - Anaerobic decomposition in natural wetlands.
Natural wetlands are the largest natural source of methane globally. In these waterlogged environments, bacteria break down organic matter in the absence of oxygen, a process known as anaerobic decomposition. While other gases have natural cycles, such as carbon dioxide from respiration and volcanic activity, the link between wetlands and methane is a fundamental component of the Earth's natural greenhouse gas balance.

38. (2) Sulfur dioxide.
Chlorofluorocarbons, halons, and carbon tetrachloride are all recognized as ozone-depleting substances and are regulated under the Montreal Protocol. Sulfur dioxide, however, is primarily known as a precursor to acid rain and a contributor to atmospheric aerosols. While it affects air quality and climate, it does not play a direct role in the chemical destruction of the stratospheric ozone layer.

39. (4) Soil salinization and subsequent desertification.
Excessive irrigation in arid regions, especially without proper drainage, causes the water table to rise. As water evaporates from the surface, it leaves behind dissolved salts that accumulate in the root zone. This process eventually makes the soil too saline for most vegetation to survive. The resulting loss of plant cover leaves the land vulnerable to erosion, leading to permanent desertification.

40. (1) A-ii, B-iii, C-iv, D-i
Regional deforestation is driven by distinct economic activities. In the Amazon, cattle ranching and soy farming are primary factors. Southeast Asia sees significant forest loss due to palm oil expansion. Sub-Saharan Africa is largely impacted by subsistence farming and fuelwood needs. In Boreal regions, commercial logging for timber and pulp is a major driver. Identifying these patterns helps tailor conservation strategies.

41. (3) 1996.
The United Nations Convention to Combat Desertification was adopted in 1994 following the 1992 Rio Earth Summit. However, it did not formally enter into force until 1996 after receiving the necessary number of ratifications. It remains the only legally binding international agreement that links environment and development to sustainable land management, specifically targeting the challenges faced by populations in dryland ecosystems.

42. (2) II, I, III, IV
Global Warming Potential measures how much heat a gas traps relative to carbon dioxide, which has a value of one. Methane has a higher potential than CO_2, followed by nitrous oxide. Synthetic chemicals like CFC-12 have the highest potentials, often thousands of times greater than CO_2. This ranking highlights why even small emissions of certain industrial gases can have significant climate impacts.

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9. (3) It assesses scientific and technical information relevant to understanding human-induced climate change.
The Intergovernmental Panel on Climate Change does not conduct original research or monitor the atmosphere directly. Instead, it systematically reviews and synthesizes thousands of peer-reviewed scientific papers. This process provides policymakers with a comprehensive summary of climate drivers, impacts, and mitigation options. Its assessments form the scientific foundation for international climate negotiations and policy development.

10. (1) A-iii, B-i, C-iv, D-ii
Carbon dioxide primarily originates from burning fossil fuels, while methane is released during enteric fermentation in livestock. Nitrous oxide emissions are largely linked to the application of synthetic nitrogen fertilizers in agriculture. Synthetic chemicals like chlorofluorocarbons were historically used as refrigerants and propellants. Identifying these specific sources is crucial for developing targeted emission reduction strategies globally.

11. (4) Thermal expansion of seawater combined with the melting of land-based glaciers and ice.
Global sea-level rise is primarily driven by two warming-related processes. First, seawater expands as it absorbs heat, increasing its volume. Second, the melting of land-based glaciers and ice sheets adds new water to the basins. While sea ice melting affects albedo and ecosystems, it does not directly contribute significantly to volume increases compared to land ice.

12. (1) Both A and R are true and R is the correct explanation of A.
Extremely low temperatures during the Antarctic winter lead to the formation of polar stratospheric clouds. These clouds facilitate unique chemical reactions that release reactive chlorine from reservoir species. When sunlight returns in the spring, this chlorine rapidly destroys ozone molecules, creating the seasonal ozone hole. This localized phenomenon demonstrates the interaction between atmospheric physics and man-made chemicals.

13. (3) To restore degraded landscapes and combat desertification across the Sahel via sustainable management.
The Great Green Wall is an ambitious African-led initiative aiming to restore 100 million hectares of degraded land. It focuses on the Sahel region to combat desertification, improve food security, and create jobs. Rather than just planting a line of trees, it promotes a mosaic of sustainable land management practices and agroforestry tailored to local ecological needs.

14. (4) Carbon release - Decaying or burning cleared vegetation releases stored atmospheric CO_2.
Forests act as major carbon reservoirs, storing vast amounts of carbon in their biomass and soil. When trees are cut and burned or left to decay, this stored carbon is released back into the atmosphere as carbon dioxide. This process significantly contributes to the greenhouse effect, making deforestation a major driver of global warming and climate change.

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15. (1) I, II and IV
The Paris Agreement focuses on limiting global temperature increases to well below 2.0 degrees Celsius. It encourages efforts to reach a 1.5-degree limit to minimize severe impacts. Countries submit Nationally Determined Contributions, which are self-defined climate action plans. Unlike earlier treaties, it uses a flexible bottom-up approach rather than imposing top-down, legally binding emission targets on states.

16. (2) The Amazon Basin in South America
Although forest loss occurs globally, the Amazon Basin currently experiences the highest absolute rates of tropical deforestation. Driven by agricultural expansion and cattle ranching, this loss threatens the world's most biodiverse ecosystem. Protecting the Amazon is vital for maintaining regional rainfall patterns and global carbon cycles. Monitoring these trends is essential for international conservation efforts and climate mitigation.

17. (1) Both Statement I and Statement II are correct.
Improper irrigation in drylands often leads to waterlogging and the subsequent accumulation of salts in the topsoil. This process, known as salinization, makes the land toxic for most crops and vegetation. As soil productivity declines, the

51. (3) It synthesizes published scientific papers to summarize climate drivers and potential impacts.
The Intergovernmental Panel on Climate Change does not carry out its own scientific research. Instead, hundreds of experts from around the world volunteer to review and synthesize existing peer-reviewed literature. This process ensures that its assessment reports reflect the current global scientific consensus on climate change. These summaries provide policymakers with the most reliable and comprehensive information available for decision-making.

52. (1) Both A and R are true and R is the correct explanation of A.
Trees in the Amazon basin play a critical role in the regional water cycle by recycling moisture through evapotranspiration. This process supplies a large portion of the water needed for rainfall in the area. When forests are removed, this moisture source is significantly reduced, leading to a decline in precipitation. This feedback loop can potentially trigger a transition toward drier, savanna-like conditions.

53. (3) Nitrous oxide emissions are predominantly associated with the cooling systems of older refrigerators.
Carbon dioxide is the main gas emitted by humans, and methane is more potent despite its shorter life. However, nitrous oxide emissions are primarily linked to agricultural activities, specifically the use of synthetic nitrogen fertilizers. Refrigeration systems are historically associated with ozone-depleting substances like chlorofluorocarbons and modern hydrofluorocarbons. Correctly identifying these sources is vital for designing effective environmental policies and emission reductions.

54. (2) Overgrazing by nomadic livestock herds.
While climate variability plays a significant role in the Sahel, overgrazing has historically been the primary human driver of land degradation. Excessive grazing by livestock removes protective vegetation, leaving the soil exposed to erosion by wind and rain. This reduces the land's productivity and ability to recover, leading to desertification. Addressing this requires managing livestock densities and promoting sustainable grazing practices.

55. (2) II, III and IV
Ozone depletion is most severe over the Antarctic due to unique meteorological conditions like the polar vortex. Polar stratospheric clouds provide the necessary surfaces for the chemical reactions that release ozone-destroying chlorine. The Montreal Protocol is a successful, universally ratified treaty that phases out these harmful substances. The Antarctic ozone hole typically reaches its maximum size during the southern hemisphere's spring season.

56. (1) Expanding urban heat islands.
Natural carbon sinks, such as oceans, intact forests, and peatlands, absorb and store more carbon dioxide than they release. These ecosystems are vital for regulating the global climate. In contrast, urban areas are significant sources of carbon emissions due to energy use and transportation. The "urban heat island" effect refers to localized warming in cities and is not a mechanism for carbon sequestration.

57. (3) A decrease in ocean pH, causing ocean acidification.
When the oceans absorb increased levels of atmospheric carbon dioxide, the gas reacts with seawater to form carbonic acid. This process increases the concentration of hydrogen ions, leading to a decrease in the water's pH level. This phenomenon, known as ocean acidification, makes it more difficult for marine organisms like corals and shellfish to build and maintain their calcium carbonate structures.

58. (1) Physical indicator - Decline in groundwater table.
Desertification can be monitored using various indicators. A decline in the groundwater table is a key physical indicator reflecting water scarcity. Changes in plant species composition are biological indicators, while soil salinity is a chemical indicator. Social indicators involve human impacts, such as the outmigration of populations from degraded lands. Accurately categorizing these indicators is essential for effective environmental monitoring and policy responses.

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43. (4) The Amazon holds about 10% of global biodiversity, which is severely threatened by habitat loss.
The Amazon rainforest is a global biodiversity hotspot, home to a vast array of unique plant and animal species. Deforestation directly threatens this richness through habitat destruction and fragmentation. Beyond local impacts, the loss of this forest disrupts regional rainfall and reduces the global carbon sink. Protecting the Amazon is therefore critical for both biological conservation and stabilizing the Earth's climate system.

44. (2) Nationally Determined Contributions (NDCs).
Nationally Determined Contributions are the core mechanism of the Paris Agreement. They allow each country to set its own targets and strategies for reducing greenhouse gas emissions based on its specific capabilities and circumstances. These plans are updated every five years, with the expectation that each successive contribution will reflect higher ambition. This bottom-up approach encourages universal participation in climate action.

45. (1) I and II only
Deforestation significantly alters local environments by reducing evapotranspiration, which can lead to lower rainfall. It also typically increases surface albedo, as cleared land reflects more sunlight than dark forest canopies. Contrary to increasing soil carbon, the removal of vegetation and subsequent soil disturbance usually leads to a rapid loss of organic carbon. This happens as the soil organic matter decomposes more quickly.

46. (4) O_3; formed when UV light splits O_2 molecules, which then combine with unbroken O_2.
Stratospheric ozone has the chemical formula O_3. It forms naturally through a process where high-energy ultraviolet radiation splits diatomic oxygen molecules into individual atoms. These highly reactive oxygen atoms then collide and bond with other oxygen molecules to create triatomic ozone. This continuous cycle of creation and destruction maintains a steady-state concentration of ozone, which filters harmful UV radiation from reaching Earth.

47. (3) Statement I is correct, but Statement II is incorrect.
Rising global temperatures cause Arctic permafrost to thaw, which is an observed physical process. However, this thawing releases trapped greenhouse gases like methane and carbon dioxide into the atmosphere. Because these gases trap more heat, they accelerate further warming, creating a positive feedback loop rather than a cooling effect. This mechanism is a major concern for future climate stability and warming rates.

48. (2) V only.
Recent IPCC reports confirm that human activities are responsible for global warming and that temperatures will rise through mid-century. They also emphasize that reaching net zero CO_2 is necessary to stabilize the climate. However, sea-level rise is a long-term process that is projected to continue for centuries due to ongoing ocean warming and ice melt, rather than reversing by 2100.

49. (2) Promoting intensive monoculture farming without fallow periods.
Combating desertification requires sustainable land management practices like agroforestry, terracing, and rotational grazing. These methods help maintain soil structure, moisture, and fertility. In contrast, intensive monoculture without rest periods depletes soil nutrients and increases vulnerability to erosion. Such practices accelerate land degradation and desertification. Effective strategies instead focus on diversifying crops and allowing land to recover through natural or managed cycles.

50. (1) A-ii, B-iii, C-i, D-iv
Global environmental governance has seen the adoption of several landmark treaties over the decades. The Montreal Protocol was established in 1987 to protect the ozone layer. The UNFCCC followed in 1992, providing a framework for climate action. The UNCCD was adopted in 1994 to address desertification. Most recently, the Paris Agreement was reached in 2015, setting new targets for global temperature limits.

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for sustainable land management in the country. Key drivers include water and wind erosion, as well as vegetation degradation, which impact agricultural productivity and the livelihoods of millions.

68. (1) I, II and IV only.
Climate action involves both mitigation, which reduces emissions, and adaptation, which builds resilience to impacts. Afforestation is a key mitigation strategy as it enhances natural carbon sinks. However, complex technologies like Carbon Capture and Storage are not yet widely deployed in developing nations. Furthermore, the Paris Agreement recognizes different national circumstances, allowing for a variety of approaches rather than mandating identical technologies.

69. (3) Digestive processes of ruminant livestock such as cattle, producing methane.
Enteric fermentation is a natural digestive process occurring in ruminant animals like cattle, sheep, and goats. Microorganisms in the rumen break down plant material, producing methane as a byproduct, which is then released into the atmosphere. This process is a significant anthropogenic source of methane, making livestock management a key area for reducing agricultural greenhouse gas emissions and addressing global warming.

70. (1) A-i, B-ii, C-iv, D-iii
Different ecosystems face unique threats from climate change. Coral reefs are highly sensitive to thermal stress, leading to bleaching. The Arctic tundra is impacted by permafrost thaw, which releases greenhouse gases. Tropical rainforests face higher risks of fire and drying. Coastal mangroves are vulnerable to rising sea levels and limited space for landward migration. Recognizing these specific vulnerabilities is crucial for targeted conservation.

71. (4) The atmospheric accumulation of carbon dioxide from fossil fuel combustion.
Since the industrial revolution, human activities have altered the Earth's energy balance. While various factors like methane and aerosols contribute to radiative forcing, carbon dioxide from burning fossil fuels provides the largest positive contribution. Its long atmospheric lifetime and high total emissions make it the primary driver of observed global warming. Reducing CO_2 levels is therefore the most critical priority for stabilizing the climate.

72. (1) Both A and R are true and R is the correct explanation of A.
The transition to the Paris Agreement marked a significant change in international climate policy. By moving away from the rigid targets of the Kyoto Protocol, the agreement adopted a bottom-up model. This allows each nation to determine its own contributions based on local capacity and priorities. This flexibility was essential for achieving near-universal participation, ensuring that both developed and developing countries contribute.

73. (3) The Boreal forests are entirely immune to human-induced deforestation and logging.
While tropical regions have historically faced the highest rates of forest loss, Boreal forests in Russia and Canada are not immune to human impacts. These areas are subject to significant commercial logging for timber and paper industries. Additionally, climate-induced factors like increased pest outbreaks and more frequent wildfires also threaten these ecosystems. Understanding that all forest types face pressures is vital for global conservation.

74. (1) Antarctica.
The United Nations Convention to Combat Desertification operates through regional implementation annexes that cover Africa, Asia, Latin America and the Caribbean, and parts of Europe. These regions contain the vast majority of the world's arid and semi-arid lands where populations are vulnerable to degradation. Antarctica, being a polar desert without a resident human population or agricultural activity, is not a focus.

75. (2) I, II and IV
The stratospheric ozone layer is vital for protecting life by absorbing most harmful UV-B radiation. This prevents genetic damage and other health issues in organisms. Ozone levels are not uniform; they vary by latitude and season due to atmospheric circulation and chemical cycles. Molecules undergo a continuous natural cycle of

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river deposits and loose gravel.
(2) It consists entirely of thick basaltic lava flows.
(3) It is dominated by marine limestone deposited during the Cenozoic era.
(4) It is primarily composed of Archean rocks like granites and gneisses.
(5) Question not attempted

8. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): The Himadri range is asymmetric in its relief, with steep slopes towards the south and comparatively gentle slopes towards the north.
Reason (R): The compressive forces generated from the Indian plate pushing northward were much stronger than those from the Eurasian plate.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. Which of the following high-altitude mountain passes crucially connects Srinagar with Kargil and Leh?
(1) Bara Lacha La
(2) Shipki La
(3) Zoji La
(4) Nathu La
(5) Question not attempted

10. Consider the following statements regarding the Lesser Himalayas (Himachal):
I. It runs parallel to the Greater Himalayas, situated to its south.
II. The Pir Panjal range forms its longest and most prominent mountain chain.
III. It is widely renowned for famous hill stations like Shimla, Mussoorie, and Nainital.
IV. It is completely devoid of vegetation and remains permanently covered in thick snow.
Which of the above statement(s) is/are correct?
(1) I, II and III
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

11. Identify the hill station that is geographically NOT a part of the Lesser Himalayas:
(1) Dalhousie
(2) Darjeeling
(3) Ranikhet
(4) Mount Abu
(5) Question not attempted

12. All of the following are distinct characteristic features of the Shivalik range EXCEPT:
(1) They are composed primarily of unconsolidated sediments brought down by Himalayan rivers.
(2) They form a highly continuous mountain barrier with average elevations exceeding 6000 meters.
(3) They form the outermost and youngest range of the Himalayan mountain system.
(4) They enclose prominent flat-bottomed longitudinal valleys known as Duns.
(5) Question not attempted

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13. What is the primary geological mechanism behind the formation of 'Duns' in the Himalayan foothill region?
(1) Violent volcanic eruptions leading to widespread caldera formations and the subsequent collapse of heavy volcanic cones.
(2) Intense aeolian (wind) erosion occurring in the arid and semi-arid regions located within the trans-Himalayan rain shadow.
(3) Deposition of coarse gravel in temporary lakes formed by tectonic uplift, later drained by seasonal river systems.
(4) Extensive glacial erosion carving out massive U-shaped valleys through the moving action of ice during the Pleistocene Ice Age.
(5) Question not attempted

14. Match List-I with List-II:
List I: Valley/Dun
A. Dehradun
B. Kangra Valley
C. Kashmir Valley
D. Neora Valley

CHAPTER 08
Physiographic Divisions of India

1. Based on macro-level geomorphological features, into how many major physiographic divisions is India traditionally classified?
(1) Four
(2) Six
(3) Five
(4) Seven
(5) Question not attempted

2. Read the given statements and select the correct option.
Statement I: The Himalayas were formed as a direct consequence of the convergence and collision between the Indian Plate and the Eurasian Plate.
Statement II: The upliftment of the Himalayas occurred rapidly in a single geological phase during the Pleistocene epoch.
(1) Statement I is correct but Statement II is incorrect.
(2) Statement II is correct but Statement I is incorrect.
(3) Both Statement I and Statement II are correct.
(4) Both Statement I and Statement II are incorrect.
(5) Question not attempted

3. Which of the following statements regarding the Trans-Himalayan region is incorrect?
(1) The Karakoram range forms the northernmost part of this division.
(2) It largely consists of marine sedimentary rocks underlain by ancient granites.
(3) It lies immediately to the south of the Great Himalayan range.
(4) The Zaskar and Ladakh ranges are prominent features of this geomorphic division.
(5) Question not attempted

4. Match List-I with List-II:
List I: Mountain Peak
A. K2 (Godwin Austen)
B. Rakaposhi
C. Kamet
D. Dhaulagiri
List II: Mountain Range
i. Karakoram Range
ii. Ladakh Range
iii. Zaskar Range
iv. Greater Himalayas
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

5. Consider the following statements regarding the Karakoram Range:
I. It forms India's frontiers with Afghanistan and China.
II. The massive Siachen and Biafo glaciers are located in this range.
III. It is classified geologically as a sub-range of the Lesser Himalayas.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

6. Which of the following major rivers flows northwestward between the Ladakh range and the Zaskar range?
(1) Shyok
(2) Indus
(3) Sutlej
(4) Chenab
(5) Question not attempted

7. Which of the following statements accurately describes the core lithological composition of the Greater Himalayas (Himadri)?
(1) It is primarily composed of unconsolidated

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(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

49. India's only confirmed active volcano is located in which distinct part of the country?
(1) Narcondam Island
(2) Barren Island
(3) Minicoy Island
(4) Majuli Island
(5) Question not attempted

50. Consider the following statements regarding the immense economic significance of India's physiographic divisions:
I. The northern plains provide the primary and most expansive agricultural base of the country.
II. The peninsular plateau acts as the definitive storehouse of major mineral resources.
III. The Himalayas serve as a critical source of rich forest wealth and perennial river systems.
IV. The coastal plains are completely barren and virtually devoid of any agricultural or economic utility.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) III and IV
(3) IV only
(4) I, II and III
(5) Question not attempted

51. Which of the following world-renowned mountain peaks does not belong to the Greater Himalayas (Himadri)?
(1) Mount Everest
(2) Kangchenjunga
(3) K2 (Godwin Austen)
(4) Makalu
(5) Question not attempted

52. What is the most geomorphologically accurate definition of the 'Bhabar' belt?
(1) A remarkably wide coastal strip featuring extensive sand dunes and saline lagoons.
(2) The elevated terrace-like older alluvium deposits strictly situated above the floodplains.
(3) The low-lying marshy and swampy tract bordering the active estuarine deltas.
(4) A narrow, highly porous belt of pebbles lying parallel to the Shivalik foothills.
(5) Question not attempted

53. The critically important Gangotri and Yamunotri glaciers are located in which major division of the Himalayas?
(1) Trans-Himalayas
(2) Lesser Himalayas
(3) Greater Himalayas
(4) Shivalik Range
(5) Question not attempted

54. Match List-I with List-II:
List I: Notable Geographical Feature
A. Highest Peak of Aravallis
B. Highest Peak of Satpuras
C. Highest Peak of Nilgiris
D. Highest Peak of Naga Hills
List II: Associated Mountain Range
i. Dhupgarh
ii. Doddabetta
iii. Guru Shikhar
iv. Saramati
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-ii, D-iv
(3) A-iii, B-ii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

55. Consider the following statements regarding the Central Highlands:
I. They lie geographically to the north of the Narmada river valley.
II. The Vindhyan range continuously bounds it on the south.
III. The Aravallis form its distinct boundary on the northwest.
IV. The major rivers draining this region consistently flow from southwest to northeast.
V. The eastward extensions of this plateau are locally known as Bundelkhand and Baghelkhand.
Which of the above statement(s) is/are correct?
(1) I, II, III and V
(2) I, II, IV and V
(3) II, III, IV and V
(4) I, II, III, IV and V

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List II: State/UT
i. Himachal Pradesh
ii. Uttarakhand
iii. West Bengal
iv. Jammu & Kashmir
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-iv, B-iii, C-i, D-ii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

15. Consider the following statements about the Eastern Himalayas:
I. The altitude of the Eastern Himalayas rises very rapidly from the adjoining plains.
II. The region receives substantially higher rainfall compared to the Western Himalayas.
III. The natural treeline is found at a higher altitude in the Eastern Himalayas than in the West.
IV. It is characterized by thick, dense forests and exceptionally high biological diversity.
V. The Shivalik range is structurally more prominent and distinct here than in the western sector.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) III and IV
(3) V only
(4) IV and V
(5) Question not attempted

16. What is the primary environmental cause for the exceptionally high biodiversity found in the Eastern Himalayas?
(1) The extreme proximity to the Tropic of Cancer causing constant and intense summer heat across the foothills.
(2) A unique combination of high precipitation, humidity, and a wide array of altitudinal zones.
(3) The complete and absolute absence of any significant human habitation or industrial activity throughout the region.
(4) The widespread presence of ancient, highly fertile volcanic soils derived from prehistoric tectonic activity.
(5) Question not attempted

17. The vast stretch of the North Indian Plains has been formed primarily by the interplay of which three major river systems?
(1) Indus, Ganga, and Godavari
(2) Indus, Ganga, and Brahmaputra
(3) Ganga, Brahmaputra, and Narmada
(4) Indus, Mahanadi, and Brahmaputra
(5) Question not attempted

18. Identify the correctly matched pair regarding the longitudinal subdivisions of the North Indian Plains:
(1) Bhangar - The extensive older alluvium terrace containing calcareous nodules called Kankar
(2) Bhabar - A damp, marshy, and swampy tract covered with thick forests
(3) Terai - A highly porous, gravel-ridden tract where numerous mountain streams disappear
(4) Khadar - The highest elevated plateau tract of the plains entirely safe from floodwaters
(5) Question not attempted

19. Read the following scenario and identify the specific physiographic zone being described:
A soil surveyor is examining a specific region at the foothills of the Himalayas. She notes a narrow, horizontal belt where numerous streams re-emerge to the surface, creating a persistently damp, marshy, and thickly forested environment. Which specific physiographic zone is she surveying?
(1) Bhabar
(2) Bhangar
(3) Terai
(4) Khadar
(5) Question not attempted

20. Which of the following represents the correct sequential order of the geomorphological features of the North Indian Plains moving strictly from North to South?
(1) Terai, Bhabar, Bhangar, Khadar
(2) Bhabar, Terai, Bhangar, Khadar
(3) Khadar, Bhangar, Terai, Bhabar
(4) Bhabar, Bhangar, Terai, Khadar
(5) Question not attempted

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21. Why are the Khadar soils universally considered to be more fertile than the Bhangar soils in the northern plains?
(1) They are located at significantly higher altitudes, naturally preventing soil erosion.
(2) They are heavily enriched with ancient volcanic ash deposits from deep prehistoric sub-surface eruptions.
(3) They receive regular and recurrent deposits of fresh, nutrient-rich silt during annual river floods.
(4) They contain a profoundly higher concentration of calcareous 'kankar' nodules.
(5) Question not attempted

22. Read the given statements and select the correct option.
Statement I: The Western Plains of India, encompassing large parts of Punjab and Haryana, are heavily dominated by the doabs of the Indus river system.
Statement II: This region strategically acts as a major water divide between the Indus and the Ganga river systems.
(1) Statement I is correct but Statement II is incorrect.
(2) Statement II is correct but Statement I is incorrect.
(3) Both Statement I and Statement II are correct.
(4) Both Statement I and Statement II are incorrect.
(5) Question not attempted

23. Which of the following statements presents the most appropriate description of the broad geographical extent of the Ganga Plains?
(1) It spans widely from the Indus river in the west to the Mahanadi river in the east.
(2) It lies exclusively and entirely within the political boundaries of Uttar Pradesh and Bihar.
(3) It is strictly confined to the narrow region situated directly south of the Vindhyan range.
(4) It extends longitudinally between the Ghaggar and Teesta rivers.
(5) Question not attempted

24. Match List-I with List-II:
List I: Doab of Punjab
A. Bist Doab
B. Bari Doab
C. Rachna Doab
D. Chaj Doab
List II: Rivers defining it
i. Beas and Ravi
ii. Beas and Sutlej
iii. Chenab and Jhelum
iv. Ravi and Chenab
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-iv, B-iii, C-i, D-ii
(4) A-ii, B-iii, C-i, D-iv
(5) Question not attempted

25. Consider the following statements regarding the Brahmaputra Plains:
I. They are formed largely by the continuous aggradational work of the Brahmaputra and its tributaries.
II. Braided channels, riverine islands, and shifting sandbars are prominent geographic features of this plain.
III. Majuli, recognized as the world's largest fully formed riverine island, is situated in this region.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

26. The remarkably frequent and devastating annual floods in the Brahmaputra Plains are primarily caused by:
(1) Extremely heavy rainfall in the catchment area combined with the river's inherently high sediment load.
(2) Sudden and massive tectonic subsidence of the entire Assam valley floor following intense seismic activity.
(3) Unprecedented and rapid melting of seasonal sea ice in the northern reaches of the Bay of Bengal.
(4) Severe and uncontrolled deforestation across the central peninsular plateau region.
(5) Question not attempted

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27. Which of the following statements about the broad structure of the Peninsular Plateau is incorrect?
(1) It fundamentally constitutes a part of the oldest landmass of the Indian subcontinent, Gondwanaland.
(2) It is structurally composed primarily of old crystalline, igneous, and metamorphic rocks.
(3) It generally features broad, shallow valleys interspersed with rounded, heavily denuded hills.
(4) It was formed directly by the massive tectonic collision of the Indian plate with the Eurasian plate.
(5) Question not attempted

28. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): The rivers of the Peninsular Plateau generally form deep V-shaped valleys characterized by intense active erosion.
Reason (R): The Peninsular Plateau is considered to be one of the most stable, ancient, and mature landmasses of the Earth's crust.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

29. The Central Highlands region of the Peninsular Plateau is distinctly bounded on the south by which of the following mountain ranges?
(1) Aravalli Range
(2) Western Ghats
(3) Vindhya Range
(4) Satpura Range
(5) Question not attempted

30. Consider the following statements regarding the Aravalli Range:
I. It represents one of the oldest fold mountain systems in the world.
II. It extends continuously from Gujarat to Delhi without any geographical breaks or gaps.
III. Guru Shikhar is recognized as the highest peak in this mountain range.
IV. It acts as a major climatic barrier, significantly contributing to the aridity of western Rajasthan.
Which of the above statement(s) is/are correct?
(1) I, II and III
(2) I, III and IV
(3) II, III and IV
(4) I, II, III and IV
(5) Question not attempted

31. Identify the odd one out among the following Indian rivers based on their point of origin in the Peninsular Plateau:
(1) Gandak
(2) Chambal
(3) Betwa
(4) Son
(5) Question not attempted

32. The highly eroded, deep, and dissected topography of the Malwa plateau, particularly evident in the Chambal valley, is famous for which geographical feature?
(1) U-shaped glacial valleys
(2) Badland topography (Ravines)
(3) Expansive Karst topography
(4) Coastal atolls
(5) Question not attempted

33. Which of the following options best describes the general elevation and primary slope of the Deccan Plateau?
(1) It is elevated higher in the east and slopes gently towards the west.
(2) It is elevated higher in the west and slopes gently towards the east.
(3) It maintains a uniform elevation with a distinct and sharp slope towards the north.
(4) It forms a massive geological depression in the center with elevated rims on all sides.
(5) Question not attempted

34. Match List-I with List-II:
List I: Plateau Sub-region
A. Meghalaya Plateau
B. Chotanagpur Plateau
C. Malwa Plateau
D. Telangana Plateau
List II: State where it predominantly lies

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creation and destruction, a delicate equilibrium that can be disrupted by man-made chemicals.

76. (3) 50%.
The Amazon Basin is home to approximately half of the world's remaining tropical rainforests. This immense scale makes it a cornerstone of global biodiversity and a critical regulator of the Earth's climate and water cycles. Because it stores such a vast amount of carbon, its continued protection is essential for preventing catastrophic levels of global warming and preserving countless unique species.

77. (4) Statement I is incorrect, but Statement II is correct.
While solar variability influences climate over very long timescales, it is not the cause of recent rapid warming. Satellite observations confirm that solar output has remained relatively stable or slightly decreased since the mid-20th century. During the same period, global surface temperatures have risen sharply. This divergence strongly indicates that the primary driver of modern warming is the accumulation of greenhouse gases.

78. (1) I, II, IV, III
The depletion process begins with the formation of the polar vortex, which isolates Antarctic air. As temperatures drop, polar stratospheric clouds form. Inactive chlorine compounds then accumulate on the surfaces of these cloud particles. When sunlight returns in the spring, it provides the energy needed to trigger rapid chemical reactions that destroy ozone molecules. This step-by-step mechanism creates the seasonal ozone hole.

79. (1) Stabilization through planting of indigenous drought-resistant shrubs.
In regions like western Rajasthan, shifting sand dunes pose a threat to agriculture and settlements. The most effective long-term strategy involves biological stabilization. Planting native, drought-resistant shrubs and grasses helps bind the sand with their roots and reduces wind speed at the surface. This prevents the dunes from moving and allows for the gradual restoration of vegetation cover in degraded areas.

80. (1) A-ii, B-i, C-iv, D-iii
REDD+ focuses on incentivizing forest conservation by valuing stored carbon, while the Bonn Challenge aims for large-scale land restoration. The Great Green Wall is an African-led effort to combat desertification in the Sahel region. The Clean Development Mechanism, a part of the Kyoto Protocol, allows for emission-reduction projects in developing nations. These diverse mechanisms reflect the multi-faceted global approach to addressing environmental degradation.

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Statement II: They have been heavily eroded, broken, and dissected by major east-flowing peninsular rivers like the Godavari, Krishna, and Kaveri.
(1) Statement I is correct but Statement II is incorrect.
(2) Statement II is correct but Statement I is incorrect.
(3) Both Statement I and Statement II are correct.
(4) Both Statement I and Statement II are incorrect.
(5) Question not attempted

43. Identify the incorrect statement regarding the Coastal Plains of India:
(1) The Western Coastal Plain is distinctly narrower in width than the Eastern Coastal Plain.
(2) The Eastern Coastal Plain features well-developed, extensive river deltas.
(3) The Western Coastal Plain consists largely of submerged coastal plains.
(4) The Eastern Coastal Plain is highly indented and ideal for deep-water ports.
(5) Question not attempted

44. Match List-I with List-II:
List I: Coastal Section
A. Konkan Coast
B. Malabar Coast
C. Coromandel Coast
D. Northern Circar
List II: Corresponding Region
i. Kerala
ii. Maharashtra-Goa
iii. Tamil Nadu-Andhra Pradesh
iv. Odisha-Andhra Pradesh
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iii, D-iv
(3) A-iv, B-iii, C-i, D-ii
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

45. Consider the following statements about the major West-flowing rivers of the Peninsular plateau:
I. They typically do not form vast deltas at their mouths.
II. They form deep estuaries due to the steep gradient of the Western Ghats.
III. They carry a massive, unmanageable load of alluvium compared to East-flowing rivers.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

46. The Lakshadweep Islands, located in the Arabian Sea, are geologically formed primarily from:
(1) Intense submarine volcanic hotspot eruptions
(2) Submerged peaks of a southern extension of the Himalayan chain
(3) Isolated fragments of tectonic continental drift
(4) Massive biological accumulation of coral polyps
(5) Question not attempted

47. Which of the following geographical oceanic channels is correctly paired with the regions it separates?
(1) Nine Degree Channel - Separates Minicoy Island from the rest of the Lakshadweep archipelago
(2) Eight Degree Channel - Separates the Andaman group from the Nicobar group in the southeastern Bay of Bengal
(3) Ten Degree Channel - Separates the Maldives from the Lakshadweep Islands across the Laccadive Sea
(4) Palk Strait - Separates the Andaman Islands from mainland India across the eastern maritime boundary
(5) Question not attempted

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48. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): The West Coast of India is characterized by the presence of several naturally indented ports and harbours.
Reason (R): The Eastern Coastal Plains receive a significantly higher amount of annual rainfall than the Western Coastal Plains.
(1) Both A and R are true and R is the correct explanation of A.

i. Jharkhand
ii. Madhya Pradesh
iii. Meghalaya
iv. Telangana
(1) A-i, B-ii, C-iv, D-iii
(2) A-iii, B-i, C-ii, D-iv
(3) A-iv, B-iii, C-i, D-ii
(4) A-iii, B-ii, C-i, D-iv
(5) Question not attempted

35. Consider the following statements regarding the Deccan Trap region:
I. It is fundamentally of volcanic origin.
II. It is composed predominantly of extensive basaltic rock formations.
III. It covers significant geographical parts of Maharashtra and Gujarat.
IV. The constituent rocks have denuded over time, forming highly fertile regur (black) soil.
V. The primary volcanic formation took place intensely during the Precambrian era.
Which of the above statement(s) is/are correct?
(1) I, II, III and IV
(2) II, III, IV and V
(3) I, II, IV and V
(4) I, III, IV and V
(5) Question not attempted

36. The black soil region of the Deccan Plateau is considered exceptionally suitable for cotton cultivation primarily because:
(1) It is largely deficient in calcium carbonate and magnesium, which helps in deep root growth.
(2) It is highly leached and porous due to thousands of years of excessive monsoon rainfall.
(3) It naturally contains an unusually high concentration of nitrogen and phosphorus.
(4) It possesses high moisture retention capacity due to its clayey nature.
(5) Question not attempted

37. A student notes that cities situated on the windward western side of the Western Ghats (like Mumbai) receive significantly more rainfall than cities on the leeward eastern side (like Pune). This specific precipitation phenomenon is a classic example of:
(1) Convectional rainfall
(2) Cyclonic precipitation
(3) Orographic effect
(4) Frontal rainfall
(5) Question not attempted

38. The Western Ghats physically behave as a continuous mountain escarpment. What is the approximate average elevation of the Western Ghats?
(1) 300 to 600 meters
(2) 900 to 1600 meters
(3) 2000 to 3000 meters
(4) 4000 to 5000 meters
(5) Question not attempted

39. All of the following are significant, traversable mountain passes located within the Western Ghats EXCEPT:
(1) Thal Ghat
(2) Bhor Ghat
(3) Pal Ghat
(4) Haldighati Pass
(5) Question not attempted

40. Arrange the following prominent passes of the Western Ghats in the correct sequential order from North to South:
A. Pal Ghat
B. Thal Ghat
C. Bhor Ghat
D. Shencottah Gap
(1) B, C, A, D
(2) C, B, D, A
(3) B, A, C, D
(4) A, C, B, D
(5) Question not attempted

41. Which of the following geographic features is officially recognized as the highest mountain peak in the Peninsular Plateau region of India?
(1) Doddabetta
(2) Mahendragiri
(3) Anamudi
(4) Mahabaleshwar
(5) Question not attempted

42. Read the given statements and select the correct option.
Statement I: The Eastern Ghats represent a highly continuous chain of mountains running strictly parallel to the Bay of Bengal coast.

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(5) Question not attempted

56. Why do the Aravalli mountains systematically fail to cause significant orographic rainfall in the arid regions of Rajasthan?
(1) Their alignment is parallel to the direction of the Arabian Sea branch of the southwest monsoon.
(2) They are located too deep within the continental interior, far from the moisture-rich source of the Arabian Sea.
(3) They are completely covered in dense snow, physically reflecting the incoming moisture-laden winds.
(4) Their extreme high altitude completely blocks and deflects the Bay of Bengal monsoon branch.
(5) Question not attempted

57. If the massive barrier of the Himalayas were completely removed from India's northern borders, what would be the most immediate and drastic climatic consequence?
(1) The extensive coastal plains would routinely experience highly destructive severe tsunamis from tectonic shifts.
(2) The central Peninsular plateau would quickly transform into a lush tropical rainforest due to massive shifts in wind patterns.
(3) Northern Indian plains would experience freezing winds from Central Asia in winter.
(4) The Western Ghats would entirely lose their characteristic heavy orographic rainfall due to altered pressure zones.
(5) Question not attempted

58. The discontinuous mountain ranges of the Eastern Ghats finally merge with the continuous chain of the Western Ghats at which of the following specific locations?
(1) Nilgiri Hills
(2) Anaimalai Hills
(3) Cardamom Hills
(4) Palani Hills
(5) Question not attempted

59. All of the following are significant, ecologically sensitive coastal lakes or lagoons situated on the East Coast of India EXCEPT:
(1) Chilika Lake
(2) Pulicat Lake
(3) Kolleru Lake
(4) Vembanad Lake
(5) Question not attempted

60. Which of the following strategically represents the correct sequential order of the prominent sections of the Eastern Coastal Plain moving strictly from North to South?
(1) Coromandel Coast, Northern Circars, Utkal Coast
(2) Utkal Coast, Northern Circars, Coromandel Coast
(3) Northern Circars, Utkal Coast, Coromandel Coast
(4) Utkal Coast, Coromandel Coast, Northern Circars
(5) Question not attempted

61. The Great Indian Desert (Marusthali) is a vast, undulating sandy plain frequently characterized by barchans. What exactly is a barchan?
(1) A deep, subterranean freshwater hole found in isolated desert oases
(2) A dry, rocky riverbed that flows violently only during intense rain
(3) A highly distinct, crescent-shaped aeolian sand dune
(4) A shallow, highly saline salt lake formed entirely by internal drainage
(5) Question not attempted

62. Read the given statements and select the correct option.
Statement I: The Luni is widely recognized as the only large, significant river operating in the Indian Desert region.
Statement II: It carries an abundant volume of water throughout the year and drains directly and robustly into the Arabian Sea.
(1) Statement I is correct but Statement II is incorrect.
(2) Statement II is correct but Statement I is incorrect.
(3) Both Statement I and Statement II are correct.
(4) Both Statement I and Statement II are incorrect.
(5) Question not attempted

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77. A major, highly engineered railway line runs parallel to the western coast of India. The engineers constructing tunnels and bridges through this challenging region had to heavily cut across highly resistant, steep-sided mountainous escarpments. Which exact physiographic feature were they continuously traversing?
(1) The Eastern Ghats
(2) The Satpura Range
(3) The Western Ghats
(4) The Arakan Yoma
(5) Question not attempted

78. The Coromandel Coast famously receives a highly significant, life-sustaining portion of its annual rainfall during the winter season. What is the primary geomorphological and climatic reason for this specific phenomenon?
(1) Unpredictably intense localized cyclonic depressions regularly originating deep in the Arabian Sea.
(2) The sudden, massive melting of vast Himalayan glaciers profoundly impacting regional sea levels.
(3) Powerful western disturbances continuously traveling eastwards all the way from the Mediterranean Sea.
(4) Retreating northeast monsoon winds pick up moisture from the Bay of Bengal before striking the coast.
(5) Question not attempted

79. Moving longitudinally from west to east, the mighty Himalayas have been traditionally divided on the basis of prominent river valleys. Which of the following regional divisions is incorrectly matched with its bounding rivers?
(1) Punjab Himalayas: Situated between the Indus and the Sutlej rivers
(2) Kumaon Himalayas: Situated between the Sutlej and the Kali rivers
(3) Nepal Himalayas: Situated between the Kali and the Teesta rivers
(4) Assam Himalayas: Situated between the Teesta and the Ganga rivers
(5) Question not attempted

80. Arrange the following major peaks of the Himalayas strictly in descending order of their altitude:
A. Mount Everest
B. Nanda Devi
C. Kangchenjunga
D. Makalu
(1) A, C, D, B
(2) A, D, C, B
(3) A, B, C, D
(4) A, C, B, D
(5) Question not attempted

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(3) I, III and IV
(4) I, II and IV
(5) Question not attempted

71. Which of the following geomorphic features is NOT typically associated with the flat, low-gradient terrain of the mature floodplains found in the Northern Plains?
(1) Ox-bow lakes
(2) River meanders
(3) Braided river channels
(4) Deep V-shaped valleys
(5) Question not attempted

72. In the specific context of the soil composition in the Northern Plains, the term 'Kankar' strictly refers to:
(1) Hard, nodular calcareous deposits found predominantly in the older alluvium (Bhangar).
(2) The exceptionally fine silt deposited freshly by rivers during widespread annual floods.
(3) The coarse pebble and boulder beds found directly at the base foothills of the Shivaliks.
(4) The thick, unyielding marshy vegetation typical of the damp Terai region.
(5) Question not attempted

73. Which of the following statements correctly and fundamentally differentiates the major Peninsular rivers from the Himalayan rivers?
(1) Peninsular rivers are universally perennial due to groundwater, whereas Himalayan rivers are strictly seasonal.
(2) Peninsular rivers consistently carry significantly more suspended silt and alluvium than major Himalayan rivers.
(3) Peninsular rivers flow through shallow valleys with graded profiles, unlike the deep valleys of Himalayan rivers.
(4) Peninsular rivers only flow from east to west, whereas Himalayan rivers exclusively flow from west to east.
(5) Question not attempted

74. Match List-I with List-II:
List I: Specific Island/Feature
A. Pitti Island
B. Saddle Peak
C. Minicoy
D. Indira Point
List II: Key Characteristic/Location
i. Highest point in Andaman and Nicobar
ii. Southernmost tip of India
iii. Uninhabited bird sanctuary in Lakshadweep
iv. Largest island in Lakshadweep
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

75. Consider the following statements regarding the overarching geographical significance of India's physical divisions:
I. The lofty Himalayas actively intercept and regulate the monsoon climate of India.
II. The incredibly fertile Northern Plains effectively act as the essential granary of the country.
III. The ancient Peninsular Plateau firmly provides a solid base for metallurgical industries due to its immense mineral wealth.
IV. The steep slopes of the Western Ghats optimally generate substantial hydroelectric power due to their sheer gradients.
V. The extensive coastal areas consistently offer highly favorable natural conditions for the development of ports and maritime trade.
Which of the above statement(s) is/are correct?
(1) I, II, III and IV
(2) II, III, IV and V
(3) I, III, IV and V
(4) I, II, III, IV and V
(5) Question not attempted

76. The once-majestic Aravalli ranges have become highly degraded, disjointed, and significantly worn down over time. This current topographical state is primarily the result of:
(1) Intense and widespread volcanic activity during the turbulent Cenozoic era.
(2) Millions of years of relentless subaerial denudation, erosion, and weathering.
(3) Massive glacial erosion and scouring during the extreme Pleistocene ice age.
(4) Frequent, highly severe tectonic earthquakes centered in the Peninsular shield region.
(5) Question not attempted

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Because of this high velocity and short distance, they do not deposit enough sediment to form large deltas. Instead, they create deep estuaries at their mouths. They also carry much less alluvium compared to the longer, slower east-flowing rivers.

46. (4) Massive biological accumulation of coral polyps
The Lakshadweep Islands, situated in the Arabian Sea off the coast of Kerala, are entirely of coral origin. They were formed over thousands of years through the massive accumulation of skeletal remains from coral polyps on submerged volcanic ridges. These atolls and reefs are characterized by their small size, low elevation, and the presence of beautiful lagoons and diverse marine life.

47. (1) Nine Degree Channel - Separates Minicoy Island from the rest of the Lakshadweep archipelago
The Nine Degree Channel is a strategically important oceanic passage in the Arabian Sea. It serves as the geographical boundary that separates the island of Minicoy from the rest of the Lakshadweep archipelago. Such channels are defined by their latitudinal position and are critical for maritime navigation. In contrast, the Ten Degree Channel separates the Andaman group from the Nicobar group.

48. (3) A is true but R is false.
The West Coast of India features many natural ports due to its indented and submerged coastline. However, the reason provided regarding rainfall is incorrect; the Western Coastal Plains actually receive significantly higher annual rainfall than the Eastern Coastal Plains due to the southwest monsoon hitting the Western Ghats. Therefore, while the assertion is factually true, the reason mentioned is a false geographical statement.

49. (2) Barren Island
Barren Island, located in the Andaman Sea, is home to India's only confirmed active volcano. It is part of the volcanic arc that extends through Southeast Asia. While Narcondam Island is also volcanic, it is classified as extinct. Barren Island has experienced several eruptions in recent centuries, making it a site of significant geological interest within the Andaman and Nicobar island chain.

50. (3) IV only
India's physiographic divisions hold immense economic value. The northern plains are the nation's granary, the plateau provides mineral wealth, and the Himalayas offer water and forest resources. However, claiming that coastal plains are barren and useless is completely incorrect. The coastal regions are vital for agriculture, specifically rice and coconut cultivation, and support major fishing industries, international trade, and thriving maritime ports.

51. (3) K2 (Godwin Austen)
K2, also known as Godwin Austen, is the second-highest peak in the world but it is located in the Karakoram range, which is part of the Trans-Himalayas. In contrast, Mount Everest, Kangchenjunga, and Makalu are all prominent peaks belonging to the Greater Himalayas or Himadri. The Karakoram range lies further north, separated from the Great Himalayas by the Indus river valley.

52. (4) A narrow, highly porous belt of pebbles lying parallel to the Shivalik foothills.
The Bhabar is a narrow geomorphic belt, roughly 8 to 16 kilometres wide, lying parallel to the Shivalik foothills. It is composed of coarse pebbles and rocks deposited by mountain streams. Because of this rocky composition, the belt is highly porous, causing most small streams to disappear underground. This unique zone marks the transition from the rugged mountains to the flatter northern plains.

53. (3) Greater Himalayas
The Gangotri and Yamunotri glaciers are the primary sources of the Ganga and Yamuna rivers, respectively. These massive ice bodies are located within the Greater Himalayas, also known as the Himadri. This range is the highest and most continuous part of the Himalayan system, remaining permanently covered in snow and hosting numerous large glaciers that feed the perennial river systems of northern India.

54. (1) A-iii, B-i, C-ii, D-iv
Guru Shikhar is the highest point of the Aravalli Range, while Dhupgarh serves as the peak of the

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ANSWERS

1. (2) Six
India is traditionally categorized into six major physiographic units based on its diverse geological and macro-level geomorphological features. These primary divisions include the Great Himalayan mountain range, the expansive Northern Plains, the ancient Peninsular Plateau, the Great Indian Desert, the distinct Coastal Plains, and the various Island groups situated in the Arabian Sea and Bay of Bengal.

2. (1) Statement I is correct but Statement II is incorrect.
The Himalayan mountains emerged through the intense convergence and collision of the Indian and Eurasian tectonic plates, causing the Tethys Ocean sediments to uplift. However, this massive geological upliftment did not occur as a single rapid event. Instead, the range developed through multiple distinct phases over millions of years, starting from the Cretaceous period through the Pleistocene epoch.

3. (3) It lies immediately to the south of the Great Himalayan range.
The Trans-Himalayan region is located immediately to the north of the Great Himalayan range, not to its south. This geological zone primarily encompasses major mountain chains such as the Karakoram, Ladakh, Zaskar, and Kailash ranges. It is composed of ancient marine sedimentary rocks supported by granitic basements and represents a crucial transition between the Indian subcontinent and Tibet.

4. (1) A-i, B-ii, C-iii, D-iv
Mount K2 is the highest peak of the Karakoram range, while Rakaposhi is a prominent feature within the Ladakh range. Kamet serves as a major summit in the Zaskar range, and Dhaulagiri is located within the Greater Himalayas. Understanding these specific peaks and their respective ranges is essential for identifying the complex topography across the northern frontiers.

5. (1) I and II only
The Karakoram range serves as a critical geographic frontier between India, Afghanistan, and China. This high-altitude region hosts some of the world's most massive non-polar glaciers, including the Siachen and Biafo glaciers. Geologically, it is classified as a Trans-Himalayan range, being distinct from and situated further north of the Lesser Himalayas, which are located much further south.

6. (2) Indus
The Indus river flows through a structurally significant longitudinal valley situated between the Ladakh and Zaskar ranges. This major river system moves in a northwestward direction through Ladakh before entering Pakistan. The physical positioning of the river between these two prominent Trans-Himalayan mountain chains determines its initial drainage pattern and the surrounding mountainous landscape of the high-altitude cold desert.

7. (4) It is primarily composed of Archean rocks like granites and gneisses.
The core of the Greater Himalayas, also known as the Himadri, is fundamentally composed of ancient Archean rocks. These primarily include crystalline granites and gneisses that form the geological backbone of this massive mountain range. Unlike the southern Shivalik foothills which contain unconsolidated sediments, the Himadri consists of highly resistant, metamorphic, and igneous formations that sustain its extreme elevations.

8. (1) Both A and R are true and R is the correct explanation of A.
The Himadri range exhibits a distinct structural asymmetry, featuring very steep southern slopes compared to gentler northern slopes. This phenomenon resulted from the intense compressive forces generated as the Indian plate pushed northward. The pressure exerted from the southern side was significantly stronger than the resistance from the Eurasian plate, leading

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raising of the riverbed and the formation of braided channels. Consequently, the river easily overflows its banks during the monsoon season, submerging the surrounding lowlands.

27. (4) It was formed directly by the massive tectonic collision of the Indian plate with the Eurasian plate.
The Peninsular Plateau is geologically a part of the ancient Gondwanaland, making it one of the oldest and most stable landmasses on Earth. It was not formed by the recent tectonic collision that created the Himalayas. Instead, it consists of ancient crystalline, igneous, and metamorphic rocks. The plateau's landscape is characterized by rounded hills and broad, shallow, well-graded river valleys.

28. (4) A is false but R is true.
The Peninsular Plateau is a highly stable and mature landmass, characterized by rivers that flow through broad, shallow valleys with gentle gradients. Unlike youthful Himalayan rivers that carve deep V-shaped valleys through active erosion, peninsular rivers have reached a graded profile. Therefore, the assertion regarding deep V-shaped valleys is incorrect, while the description of the plateau's stability is accurate.

29. (3) Vindhya Range
The Central Highlands are located north of the Narmada river and cover a significant portion of the Malwa plateau. This physiographic region is bounded by the Aravalli Range on the northwest and the Vindhya Range on the south. The Vindhyas act as a major watershed and physical barrier, separating the central plains of India from the southern Deccan Plateau region.

30. (2) I, III and IV
The Aravalli Range is one of the world's oldest fold mountain systems, featuring Guru Shikhar as its highest peak. While it acts as a significant climatic barrier influencing the aridity of Rajasthan, it is not a continuous range. Over millions of years, it has been heavily eroded and now exists as a series of disjointed hills and ridges stretching towards Delhi.

31. (1) Gandak
The Gandak is a major Himalayan river that originates in the high mountains of Nepal and flows into the Ganga. In contrast, the Chambal, Betwa, and Son rivers all originate within the Peninsular Plateau region, specifically from the Central Highlands. These peninsular rivers generally flow northward to join the Yamuna or Ganga, following the natural slope of the ancient plateau.

32. (2) Badland topography (Ravines)
The Chambal valley is famous for its extensive badland topography, characterized by deep ravines and gullies. This highly dissected landscape was formed by intense water erosion on the soft alluvial deposits of the Malwa plateau. The resulting network of narrow, steep-sided valleys makes the land unsuitable for agriculture and is a unique geomorphological feature of the semi-arid regions of central India.

33. (2) It is elevated higher in the west and slopes gently towards the east.
The Deccan Plateau is a massive triangular landmass that exhibits a distinct tilt in its geological structure. It is generally elevated higher on its western side, where the Western Ghats are located, and slopes gently towards the east. This eastward slope is clearly evidenced by the flow of major rivers like the Godavari, Krishna, and Kaveri, which drain into the Bay of Bengal.

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34. (2) A-iii, B-i, C-ii, D-iv
The Meghalaya Plateau is an eastern extension of the peninsular shield, while the Chotanagpur Plateau predominantly covers the state of Jharkhand. The Malwa Plateau occupies a large area in Madhya Pradesh, characterized by its volcanic soil. The Telangana Plateau is situated within the state of Telangana, forming part of the semi-arid interior region of the southern Deccan landmass of India.

35. (1) I, II, III and IV
The Deccan Trap is a large volcanic province in west-central India, composed of thick basaltic lava flows. It primarily covers Maharashtra and parts of Gujarat, forming fertile black soil, also known as regur, through millions of years of denudation. However, this volcanic activity occurred during the late Cretaceous period, not the Precambrian era, making it much younger than the underlying shield.

numerous tributaries, carried massive amounts of silt and alluvium from the mountains over millions of years. This process resulted in the formation of one of the most fertile and extensive alluvial plains globally.

18. (1) Bhangar - The extensive older alluvium terrace containing calcareous nodules called Kankar
Bhangar represents the older alluvium of the northern plains, forming an upland terrace situated above the reach of regular annual floods. It is characterized by the presence of calcareous deposits known as Kankar. In contrast, the Bhabar is a porous pebble belt, the Terai is a marshy tract, and the Khadar consists of newer, fertile floodplains near the river.

19. (3) Terai
The Terai is a damp, marshy, and swampy region located immediately to the south of the Bhabar belt. In this zone, the underground streams that disappear in the porous Bhabar gravel re-emerge at the surface. Historically, this area was covered with thick forests and supported diverse wildlife, though much of it has now been cleared for intensive agricultural activities.

20. (2) Bhabar, Terai, Bhangar, Khadar
Moving from the Himalayan foothills southward, the plains are organized into four distinct geomorphological zones. First is the Bhabar, a porous pebble belt where streams disappear. Second is the Terai, where water re-emerges into marshes. Third is the Bhangar, composed of older, elevated alluvium. Finally, the Khadar consists of the youngest, most fertile floodplains located closest to the active rivers.

21. (3) They receive regular and recurrent deposits of fresh, nutrient-rich silt during annual river floods.
Khadar soils are considered more fertile than Bhangar because they are part of the active floodplains. Every year, during the monsoon season, rivers overflow and deposit fresh layers of nutrient-rich silt and clay over these areas. This natural process of renewal ensures that the soil remains productive and highly suitable for intensive agriculture, unlike the older, more leached Bhangar soils.

22. (3) Both Statement I and Statement II are correct.
The Western Plains, primarily covering Punjab and Haryana, are dominated by the fertile doabs, which are land tracts situated between the tributaries of the Indus river. Simultaneously, this region serves as a crucial hydrological divide between the Indus and the Ganga drainage systems. It prevents the waters of the two major river basins from mixing, directing them towards different seas.

23. (4) It extends longitudinally between the Ghaggar and Teesta rivers.
The Ganga Plains represent a vast expanse of fertile land extending longitudinally between the Ghaggar river in the west and the Teesta river in the east. This region spans across several Indian states, including Haryana, Delhi, Uttar Pradesh, Bihar, and parts of West Bengal. It is primarily formed by the depositional work of the Ganga and its numerous northern and southern tributaries.

24. (2) A-ii, B-i, C-iv, D-iii
The Bist Doab is situated between the Beas and Sutlej rivers, while the Bari Doab lies between the Beas and Ravi. Further west, the Rachna Doab is located between the Ravi and Chenab, and the Chaj Doab is found between the Chenab and Jhelum. These regions are characterized by extremely fertile alluvial soil, which supports intensive agriculture throughout the northern plains.

25. (4) I, II and III
The Brahmaputra Plains are formed by the extensive aggradational work of the Brahmaputra river and its tributaries in the Assam valley. This region is famous for unique geographic features like braided river channels, numerous shifting sandbars, and large riverine islands. Majuli, located within this plain, is officially recognized as the largest fully formed riverine island in the world, supporting vibrant communities.

26. (1) Extremely heavy rainfall in the catchment area combined with the river's inherently high sediment load.
Devastating annual floods in the Brahmaputra Plains are caused by exceptionally heavy rainfall in the catchment areas of northeast India and Tibet. The river also carries an immensely high sediment load, which leads to the frequent

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63. Which of the following pairs of Indian states does the massive basaltic formation of the Deccan Trap primarily encompass?
(1) Maharashtra and Gujarat
(2) Rajasthan and Punjab
(3) Odisha and West Bengal
(4) Tamil Nadu and Kerala
(5) Question not attempted

64. Match List-I with List-II:
List I: Strategic Mountain Pass
A. Bomdi La
B. Rohtang Pass
C. Nathu La
D. Banihal Pass
List II: State/UT where it is located
i. Sikkim
ii. Arunachal Pradesh
iii. Jammu & Kashmir
iv. Himachal Pradesh
(1) A-ii, B-iv, C-i, D-iii
(2) A-i, B-iii, C-ii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

65. Consider the following distinctive features associated with the Eastern Himalayas:
I. The mighty Brahmaputra river physically marks its extreme easternmost boundary.
II. Beyond the dramatic Dihang gorge, the Himalayas abruptly bend sharply to the south to form the Purvanchal hills.
III. The Purvanchal hills are mostly composed of very soft, recently deposited unconsolidated alluvial soil.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

66. Which of the following prominent regional hills is geographically NOT a structural part of the Purvanchal mountain range in northeast India?
(1) Rajmahal Hills
(2) Patkai Bum
(3) Naga Hills
(4) Mizo Hills
(5) Question not attempted

67. Identify the incorrect statement about the geological and structural characteristics of the Shivalik range:
(1) It proudly stands as the southernmost longitudinal range of the entire Himalayan mountain system.
(2) Its average altitude is relatively low, typically varying between 900 and 1100 meters.
(3) It forms an unbroken barrier from the Indus gorge to the Brahmaputra gorge.
(4) It is prone to severe landslides and soil erosion due to its unconsolidated geological structure.
(5) Question not attempted

68. The following question consists of two statements—Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): The mighty Himalayas act as a massive and unparalleled climatic divide for the entire Indian subcontinent.
Reason (R): The Himalayas are geologically classified as extremely young fold mountains recently formed by tectonic collisions.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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69. The structurally complex Meghalaya Plateau is geologically an eastward extension of which of the following major physiographic divisions?
(1) The Eastern Himalayas
(2) The Purvanchal Hills
(3) The Peninsular Plateau
(4) The Northern Plains
(5) Question not attempted

70. Identify which of the following hills are geologically a part of the Meghalaya (Shillong) Plateau:
I. Garo Hills
II. Khasi Hills
III. Jaintia Hills
IV. Dafla Hills
(1) I, II and III
(2) II, III and IV

36. (4) It possesses high moisture retention capacity due to its clayey nature.
Black soil, or regur soil, is exceptionally suited for cotton cultivation due to its high clay content and remarkable moisture retention capacity. During the dry season, the soil develops deep cracks, which aid in aeration. This self-ploughing characteristic, combined with its ability to hold water for long periods, provides the ideal conditions required for the sustained growth of cotton crops.

37. (3) Orographic effect
The significant difference in rainfall between the windward side of the Western Ghats and the leeward side is a result of the orographic effect. Moisture-laden winds from the Arabian Sea are forced to rise by the mountain barrier, leading to heavy precipitation on the western slopes. As the air descends on the eastern side, it becomes drier, creating a rain-shadow area.

38. (2) 900 to 1600 meters
The Western Ghats form a continuous and formidable mountain wall along the western edge of the Deccan Plateau. They are significantly higher than the Eastern Ghats, with an approximate average elevation ranging between 900 and 1600 meters. This elevation increases progressively from north to south, culminating in high peaks like Anamudi, which play a crucial role in determining India's regional monsoon.

39. (4) Haldighati Pass
Thal Ghat, Bhor Ghat, and Pal Ghat are critical mountain passes that allow transportation across the rugged Western Ghats. In contrast, the Haldighati Pass is located in the Aravalli Range of Rajasthan. It is historically significant but does not belong to the Western Ghats. The Western Ghats passes are essential for connecting the coastal plains with the interior regions of the plateau.

40. (1) B, C, A, D
The prominent passes of the Western Ghats are arranged from north to south starting with the Thal Ghat, followed by the Bhor Ghat near Mumbai. Further south, the Pal Ghat gap provides a major break in the mountains between Tamil Nadu and Kerala. Finally, the Shencottah Gap is located at the southern end of the range, facilitating regional connectivity and trade.

41. (3) Anamudi
Anamudi, located in the Anaimalai Hills of Kerala, is the highest mountain peak in the Peninsular Plateau and the entire South Indian region. It reaches an elevation of approximately 2,695 meters. While Doddabetta is the highest peak of the Nilgiris and Mahendragiri is a prominent peak in the Eastern Ghats, Anamudi remains the most elevated point in the peninsular shield.

42. (2) Statement II is correct but Statement I is incorrect.
The Eastern Ghats are a discontinuous and irregular chain of mountains that run along the eastern coast. Unlike the Western Ghats, they have been extensively eroded and broken by large east-flowing rivers such as the Godavari, Krishna, and Kaveri. These rivers have carved wide valleys through the range on their way to the Bay of Bengal, making the mountains much less formidable.

43. (4) The Eastern Coastal Plain is highly indented and ideal for deep-water ports.
The Western Coastal Plain is a narrow, submerged coast characterized by high indentation, which provides excellent natural conditions for deep-water ports and harbours. Conversely, the Eastern Coastal Plain is much broader and features extensive river deltas. Because the eastern coast is relatively straight and lacks deep indentations, it is less suited for the development of natural deep-water ports compared to the west.

44. (2) A-ii, B-i, C-iii, D-iv
The Konkan Coast covers the northern section of the western plains in Maharashtra and Goa, while the Malabar Coast lies further south in Kerala. On the eastern side, the Coromandel Coast spans the southern maritime reaches of Tamil Nadu and Andhra Pradesh. The Northern Circar refers to the northern part of the eastern coastal plains, primarily covering Odisha and Andhra Pradesh.

45. (1) I and II only
The major west-flowing rivers of the Peninsular Plateau, like the Narmada and Tapi, flow through steep gradients before reaching the Arabian Sea.

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to the characteristic lopsided profile of these mountains.

9. (3) Zoji La
The Zoji La pass is a vital high-altitude mountain crossing located in the Great Himalayan range. It provides the primary land connection between the Srinagar valley and the high-altitude regions of Kargil and Leh in Ladakh. This strategic pass is essential for transport and logistics, as it bridges the gap between the Kashmir valley and the Trans-Himalayan plateau.

10. (1) I, II and III
The Lesser Himalayas, known as Himachal, run parallel to the south of the Greater Himalayas. This range includes prominent chains like the Pir Panjal and Dhauladhar, hosting famous hill stations such as Shimla and Nainital. Unlike the Shivaliks, these mountains are composed of highly compressed rocks and support significant vegetation, rather than remaining permanently barren or covered only in snow.

11. (4) Mount Abu
Mount Abu is a well-known hill station located in the Aravalli Range of Rajasthan, making it geographically distinct from the Himalayan system. While Dalhousie, Darjeeling, and Ranikhet are integral parts of the Lesser Himalayan region, Mount Abu represents a residual mountain feature of the ancient Peninsular Plateau. It serves as the highest point within the ancient Aravalli fold mountains.

12. (2) They form a highly continuous mountain barrier with average elevations exceeding 6000 meters.
The Shivalik range consists of the outermost and youngest foothills of the Himalayas, formed from unconsolidated sediments. Unlike the high Himadri peaks which exceed 6000 meters in elevation and form a continuous wall, the Shivaliks have much lower average elevations and are often discontinuous. They are characterized by low altitudes, typically ranging between 900 and 1100 meters above sea level.

13. (3) Deposition of coarse gravel in temporary lakes formed by tectonic uplift, later drained by seasonal river systems.
Duns are longitudinal valleys formed by the accumulation of coarse gravel and alluvium in temporary lakes. These lakes were created when the rising Shivalik ranges obstructed the paths of rivers flowing from the higher Himalayas. Over time, these rivers breached the hills and drained the lakes, leaving behind flat-bottomed valleys like Dehradun, which are now characteristic features of the foothills.

14. (2) A-ii, B-i, C-iv, D-iii
Dehradun is the most famous longitudinal valley situated in Uttarakhand, whereas the Kangra Valley is a prominent feature of Himachal Pradesh. The Kashmir Valley is a large intermontane basin located within the Union Territory of Jammu and Kashmir. Additionally, the Neora Valley is a significant ecological zone found in the Kalimpong district of West Bengal, near the Eastern Himalayas.

15. (3) V only
In the eastern sector of the Himalayas, the Shivalik range is notably less prominent and often merges with other mountain features compared to its distinct presence in the west. The Eastern Himalayas are characterized by a rapid rise in altitude from the plains, higher rainfall, and a higher treeline. They possess dense forests and high biodiversity, distinguishing them from the western mountains.

16. (2) A unique combination of high precipitation, humidity, and a wide array of altitudinal zones.
The exceptional biodiversity found in the Eastern Himalayas is primarily driven by the region's unique environmental conditions. These include extremely high annual precipitation, high levels of humidity, and a vast range of altitudinal zones. Such diverse climatic conditions allow for the coexistence of varied ecosystems, ranging from tropical rainforests at the foothills to alpine meadows at much higher mountain elevations.

17. (2) Indus, Ganga, and Brahmaputra
The vast North Indian Plains were created through the combined depositional activities of three major Himalayan river systems. The Indus, Ganga, and Brahmaputra, along with their

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Satpura mountains. Doddabetta is the highest summit in the Nilgiri Hills of South India. Saramati is the most elevated peak in the Naga Hills along the eastern frontier. These peaks are essential geographical markers for identifying the highest elevations across India's diverse mountain ranges.

55. (4) I, II, III, IV and V
The Central Highlands are positioned north of the Narmada river and are bounded by the Vindhyas to the south and Aravallis to the northwest. Rivers here generally flow from southwest to northeast, following the plateau's natural slope towards the Yamuna. The region's eastward extensions are known as Bundelkhand and Baghelkhand, while the further east Chotanagpur Plateau marks another significant mineral-rich upland area.

56. (1) Their alignment is parallel to the direction of the Arabian Sea branch of the southwest monsoon.
The Aravalli mountains do not produce significant orographic rainfall in western Rajasthan because their orientation is parallel to the incoming Arabian Sea branch of the southwest monsoon. As a result, moisture-laden winds pass along the range without being forced to rise and cool. This lack of a physical barrier to obstruct the winds prevents the condensation necessary for heavy precipitation in the region.

57. (3) Northern Indian plains would experience freezing winds from Central Asia in winter.
If the Himalayas were absent, the northern plains of India would be exposed to the frigid, bone-chilling winds blowing from Central Asia during the winter months. The mountains currently act as a massive physical barrier, protecting the subcontinent from these cold air masses and ensuring a much milder climate. Without this protection, India's northern states would experience much harsher and colder winters.

58. (1) Nilgiri Hills
The Nilgiri Hills serve as the critical geographical junction where the Western Ghats and the Eastern Ghats finally merge. Located at the borders of Tamil Nadu, Karnataka, and Kerala, this mountainous knot is famous for its high peaks like Doddabetta. This convergence point is ecologically significant, forming part of the Nilgiri Biosphere Reserve and supporting a unique variety of flora and fauna.

59. (4) Vembanad Lake
Chilika, Pulicat, and Kolleru are all significant water bodies situated along the East Coast of India. In contrast, Vembanad Lake is the largest lake in India and is located on the West Coast in the state of Kerala. It is a famous backwater system known for its ecological diversity and boat races, whereas the other lakes are lagoons or freshwater lakes in the east.

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60. (2) Utkal Coast, Northern Circars, Coromandel Coast
The Eastern Coastal Plain is divided into three major sections from north to south. It begins with the Utkal Coast along the Odisha shoreline. Moving southward, the central portion is known as the Northern Circars, spanning parts of Andhra Pradesh. Finally, the southern stretch extending towards Tamil Nadu is called the Coromandel Coast, which is famous for its winter rainfall from retreating monsoons.

61. (3) A highly distinct, crescent-shaped aeolian sand dune
Barchans are highly distinctive, crescent-shaped sand dunes formed by the action of wind in desert environments. They are particularly common in the Great Indian Desert, also known as Marusthali. These dunes have their "horns" pointing downwind and are created by a constant wind direction. They represent a major aeolian landform in the arid, undulating sandy plains of western Rajasthan and nearby regions.

62. (1) Statement I is correct but Statement II is incorrect.
The Luni is the most significant river in the Thar Desert of western Rajasthan. However, it is an ephemeral river that flows only during the brief monsoon season. Unlike perennial rivers, it does not carry water year-round and does not reach the Arabian Sea. Instead, the Luni river eventually disappears into the saline marshes of the Rann of Kutch in northern Gujarat.

63. (1) Maharashtra and Gujarat
The Deccan Trap is a massive geological formation created by volcanic eruptions millions of years ago. It primarily encompasses large geographical

32. Which of the following states is the odd one out as it does NOT fall within the Godavari river basin?
(1) Maharashtra
(2) Tamil Nadu
(3) Telangana
(4) Odisha
(5) Question not attempted

33. The Krishna river originates from a spring near which of the following places?
(1) Trimbakeshwar
(2) Mahabaleshwar
(3) Amarkantak
(4) Talakaveri
(5) Question not attempted

34. Match List I with List II and select the correct answer using the codes given below:
List I: (Dam)
A. Nagarjunasagar
B. Almatti
C. Srisailam
D. Tungabhadra
List II: (Location/River)
i. On Krishna river in Karnataka
ii. On Krishna river between AP and Telangana
iii. On a major right-bank tributary of Krishna
iv. On Krishna river with deep gorge in Nallamala hills
Codes:
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

35. Consider the following statements regarding the Krishna river basin:
I. It is the second largest east-flowing peninsular river.
II. The Tungabhadra and Bhima are its major tributaries.
III. The Musi river is a left-bank tributary of the Krishna.
IV. The Koyna dam is situated on a tributary of the Krishna.
V. It forms a joint delta with the Godavari river.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, II, IV and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

36. The frequent inter-state disputes over the Krishna river waters are primarily a cause-and-effect result of:
(1) The river changing its course significantly in recent decades
(2) The construction of run-of-the-river hydroelectric projects in the upper reaches
(3) Unregulated industrial pollution by the upper riparian states
(4) High temporal variability in rainfall and extensive agricultural water demands
(5) Question not attempted

37. The Kaveri river is characterized by less fluctuation in its water level compared to other peninsular rivers because:
(1) It is fed by a localized glacial system in the Nilgiris
(2) It flows entirely through hard terrain, minimizing seepage
(3) Upper and lower catchments receive rain from different monsoons
(4) Its entire basin is heavily forested, preventing rapid runoff
(5) Question not attempted

38. Consider the following statements regarding the Kaveri river:
Statement I: It originates in the Brahmagiri range of the Western Ghats.
Statement II: It forms the famous Sivasamudram waterfalls.
Which of the following is correct in respect of the above statements?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

39. The ongoing water dispute over the Kaveri river primarily involves which of the following states and union territories?

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These nodules are formed through the precipitation of minerals in the soil over long periods and are a distinguishing feature of the less fertile upland tracts.

73. (3) Peninsular rivers flow through shallow valleys with graded profiles, unlike the deep valleys of Himalayan rivers.
Peninsular rivers are much older than Himalayan rivers and have reached a mature stage of development. Consequently, they flow through broad and shallow valleys with graded profiles, indicating that they have nearly reached their base level of erosion. In contrast, Himalayan rivers are youthful and active, cutting deep V-shaped valleys and gorges as they flow through the high, rising mountains of the north.

74. (1) A-iii, B-i, C-iv, D-ii
Pitti Island is an uninhabited bird sanctuary in Lakshadweep, while Saddle Peak is the highest point in the Andaman and Nicobar Islands. Minicoy is the largest island within the Lakshadweep group. Indira Point, located on Great Nicobar Island, represents the southernmost tip of Indian territory. These locations are key geographical landmarks within India's oceanic territories in the Arabian Sea and Bay of Bengal.

75. (4) I, II, III, IV and V
India's physical divisions provide diverse economic benefits. The Himalayas regulate climate and provide water, while Northern Plains serve as the country's granary. The Peninsular Plateau is rich in minerals, and the Western Ghats offer high potential for hydroelectric power. Additionally, the extensive coastline facilitates international maritime trade through numerous ports. Together, these divisions form a highly balanced and resource-rich environment.

76. (2) Millions of years of relentless subaerial denudation, erosion, and weathering.
The Aravalli mountains were once a majestic fold mountain range, but today they appear as highly degraded and disjointed hills. This current state is the result of millions of years of relentless subaerial denudation, weathering, and erosion by wind and water. As one of the world's oldest mountain systems, the Aravallis have been worn down significantly from their original height by geological processes.

77. (3) The Western Ghats
The Konkan Railway is a major engineering marvel that runs parallel to the western coast of India. To build this line, engineers had to navigate the extremely challenging terrain of the Western Ghats. This involved constructing numerous tunnels and bridges through the steep-sided, rugged mountain escarpments. The range acts as a formidable barrier between the narrow coastal strip and the elevated interior of the plateau.

78. (4) Retreating northeast monsoon winds pick up moisture from the Bay of Bengal before striking the coast.
The Coromandel Coast receives significant rainfall during the winter due to the retreating northeast monsoon. As these winds blow from the land toward the sea, they pass over the Bay of Bengal, where they pick up moisture. When they strike the coast of Tamil Nadu and Andhra Pradesh, they cause heavy precipitation. This unique seasonal pattern distinguishes the east coast from the rest of India.

79. (4) Assam Himalayas: Situated between the Teesta and the Ganga rivers
The regional division of the Himalayas is based on river valleys. The Punjab Himalayas lie between the Indus and Sutlej, and the Kumaon between the Sutlej and Kali. However, the Assam Himalayas are situated between the Teesta and the Dihang rivers. Bounding them with the Ganga is incorrect, as the Ganga flows much further south than this mountainous region.

80. (1) A, C, D, B
The major Himalayan peaks, when arranged in descending order of altitude, begin with Mount Everest, the world's highest summit. It is followed by Kangchenjunga, which is the highest peak in India. Next is Makalu, located on the border between Nepal and Tibet. Finally, Nanda Devi in Uttarakhand is the lowest among these four, although it remains one of the tallest peaks in the world.

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Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, II, III and IV only
(3) I, II, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

16. Which of the following statements about the Gandak river is incorrect?
(1) It comprises two streams, the Kali Gandak and Trishul Ganga
(2) It joins the Ganga right at the city of Varanasi
(3) It rises in the Nepal Himalayas between Dhaulagiri and Mount Everest
(4) It enters the Ganga plain in the Champaran district of Bihar
(5) Question not attempted

17. The Brahmaputra river is known by different names in different regions. What is it called when it enters Bangladesh?
(1) Tsangpo
(2) Jamuna
(3) Dihang
(4) Meghna
(5) Question not attempted

18. The formation of Majuli, the world's largest riverine island, is primarily an effect of which characteristic of the Brahmaputra river?
(1) Braided channel carrying high silt loads
(2) Its deep flow through a steep V-shaped gorge
(3) Its high-altitude origin from a large glacier
(4) Its antecedent drainage pattern in the mountains
(5) Question not attempted

19. Consider the following statements regarding the Brahmaputra river:
Statement I: The Brahmaputra makes a U-turn in its course to enter India in Arunachal Pradesh.
Statement II: This U-turn is caused by the presence of the Namcha Barwa peak acting as a structural barrier.
Which of the following is correct in respect of the above statements?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

20. Which of the following represents the correct east to west sequence of the Brahmaputra tributaries joining it in India?
(1) Lohit, Dibang, Subansiri, Kameng
(2) Lohit, Dibang, Kameng, Subansiri
(3) Subansiri, Kameng, Lohit, Dibang
(4) Kameng, Subansiri, Dibang, Lohit
(5) Question not attempted

21. What is the primary reason that most Peninsular rivers flow from west to east?
(1) Eastern Ghats are structurally much higher than Western Ghats
(2) Coriolis force significantly deflects the river flow eastward
(3) General plateau gradient from west to east
(4) Eastern rocks are geologically softer and easier to erode
(5) Question not attempted

22. What is the most appropriate reason why east-flowing peninsular rivers form deltas while west-flowing rivers form estuaries?
(1) East-flowing rivers carry significantly less water volume
(2) Flow through hard rocks and rift valleys, reducing sediment
(3) Bay of Bengal experiences much stronger oceanic currents
(4) West-flowing rivers are geologically older than eastern ones
(5) Question not attempted

23. Which of the following is a correct statement regarding the Peninsular river systems?
(1) Their catchment areas are generally larger than those of the Himalayan rivers
(2) They receive significant water from glacial melts in winter
(3) They predominantly display a dendritic drainage pattern in the coastal plains
(4) They are characterized by fixed courses and absence of meanders
(5) Question not attempted

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(3) Ravi
(4) Sutlej
(5) Question not attempted

8. Given below are two statements, one labeled as Assertion (A) and the other labeled as Reason (R):
Assertion (A): The Indus river and its major Himalayan tributaries are considered antecedent drainage systems.
Reason (R): These rivers existed before the upliftment of the Himalayas and have maintained their courses by cutting deep gorges.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. At which of the following places do the rivers Alaknanda and Bhagirathi merge to form the Ganga?
(1) Rudraprayag
(2) Karnaprayag
(3) Devprayag
(4) Vishnuprayag
(5) Question not attempted

10. Consider the following statements about the course of the Ganga river:
I. It enters the plains at Haridwar.
II. It flows through the state of Jharkhand.
III. Its distributary Hooghly flows entirely through West Bengal.
IV. It meets the Brahmaputra at Dhubri in Assam.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) II and IV only
(5) Question not attempted

11. Which of the following is the longest tributary of the Ganga?
(1) Ghaghara
(2) Kosi
(3) Gandak
(4) Yamuna
(5) Question not attempted

12. Identify the incorrectly matched pair of river confluences (Prayags):
(1) Rudraprayag - Alaknanda and Mandakini
(2) Nandaprayag - Bhagirathi and Mandakini
(3) Karnaprayag - Alaknanda and Pindar
(4) Vishnuprayag - Alaknanda and Dhauliganga
(5) Question not attempted

13. The Kosi river is historically known as the Sorrow of Bihar primarily because:
(1) It carries a large amount of toxic pollutants from upstream
(2) It dries up completely during the summer months
(3) It frequently changes its course, causing massive floods
(4) It flows through a deep gorge making navigation impossible
(5) Question not attempted

14. Match List I with List II and select the correct answer using the codes given below:
List I: (Ganga Tributary)
A. Yamuna
B. Ghaghara
C. Gandak
D. Kosi
List II: (Feature)
i. Consists of seven streams known as Sapt Kosi
ii. Rises in the Mapchachungo glacier
iii. Forms a boundary between UP and Bihar
iv. Longest right-bank tributary of Ganga
Codes:
(1) A-iv, B-ii, C-iii, D-i
(2) A-i, B-iii, C-ii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

15. Consider the following statements regarding the Yamuna river:
I. It originates from the Yamunotri glacier on the Banderpunch range.
II. It joins the Ganga at Prayagraj.
III. The Chambal is its right-bank tributary.
IV. The Hindon is its left-bank tributary.
V. It flows through the state of Himachal Pradesh.

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portions of Maharashtra and Gujarat. This region is characterized by step-like topography and thick layers of basaltic rock. The weathering of these volcanic rocks has resulted in the formation of fertile black soil, which is ideal for growing crops like cotton.

64. (1) A-ii, B-iv, C-i, D-iii
Bomdi La is an important mountain pass in Arunachal Pradesh, while Rohtang Pass is located in the high mountains of Himachal Pradesh. Nathu La serves as a strategic crossing in Sikkim, connecting India with Tibet. Banihal Pass is a vital link within the Union Territory of Jammu and Kashmir, providing a gateway through the Pir Panjal range into the Kashmir valley.

65. (1) I and II only
The Brahmaputra river marks the easternmost boundary of the Himalayas. Beyond the Dihang gorge, the mountains bend sharply southward, forming the Purvanchal hills along India's eastern border. These hills are predominantly composed of strong sandstones and sedimentary rocks, rather than soft unconsolidated alluvium. They are covered with dense forests and run as parallel ranges and valleys through states like Nagaland and Manipur.

66. (1) Rajmahal Hills
Patkai Bum, Naga Hills, and Mizo Hills are all integral parts of the Purvanchal mountain system in northeast India. These ranges were formed by the same tectonic processes as the Himalayas. In contrast, the Rajmahal Hills are located in Jharkhand and are geologically a part of the ancient Peninsular Plateau. They represent a much older and structurally different landmass than the eastern mountains.

67. (3) It forms an unbroken barrier from the Indus gorge to the Brahmaputra gorge.
The Shivalik range is the southernmost and lowest longitudinal division of the Himalayas. While it follows the general curve of the mountains, it does not form an unbroken barrier from the Indus to the Brahmaputra. The range is frequently interrupted by wide gaps, particularly in the eastern sections where major rivers descend. Its average altitude is low, and its structure consists of unconsolidated sediments.

68. (2) Both A and R are true but R is not the correct explanation of A.
The Himalayas act as a massive climatic divide by blocking cold Arctic winds from the north and trapping monsoon winds within the subcontinent. This ensures high rainfall for India. While they are geologically young fold mountains formed by tectonic collisions, their altitude and position fundamentally determine their role as a barrier, rather than just their recent geological formation and age.

69. (3) The Peninsular Plateau
The Meghalaya Plateau, also known as the Shillong Plateau, is geologically an eastward extension of the main Peninsular Plateau of India. It was separated from the Chotanagpur Plateau by a massive fault, which was later filled by the sediments of the Ganga and Brahmaputra rivers. Despite its proximity to the Eastern Himalayas, its rock structure is identical to the ancient peninsular shield.

70. (1) I, II and III
The Meghalaya Plateau consists of the Garo, Khasi, and Jaintia Hills, which are named after the local tribes inhabiting the region. These hills are geologically linked to the ancient Peninsular Plateau. However, the Dafla Hills are located further north in Arunachal Pradesh and are part of the Himalayan mountain system. Therefore, the Dafla Hills are not a structural component of the Meghalaya Plateau.

71. (4) Deep V-shaped valleys
Mature floodplains in the Northern Plains are characterized by low-gradient terrain where rivers slow down and deposit sediment. This leads to features like ox-bow lakes, meanders, and braided channels. However, deep V-shaped valleys are typical of the youthful stage of a river, where intense downward erosion occurs in steep mountainous regions. Such features are not found in the flat, mature plains of northern India.

72. (1) Hard, nodular calcareous deposits found predominantly in the older alluvium (Bhangar).
In the context of the Northern Plains, the term 'Kankar' refers to hard, nodular deposits of calcium carbonate. These are predominantly found in the Bhangar soil, which is the older alluvium situated above the active floodplains.

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24. Match List I with List II and select the correct answer using the codes given below:
List I: (Peninsular River)
A. Godavari
B. Krishna
C. Mahanadi
D. Narmada
List II: (Basin/Feature)
i. Flows through a rift valley
ii. Basin shared by Maharashtra, Karnataka, Telangana, AP
iii. Largest peninsular river basin
iv. Basin mostly in Chhattisgarh and Odisha
Codes:
(1) A-iii, B-ii, C-iv, D-i
(2) A-iii, B-iv, C-ii, D-i
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

25. Consider the following tributaries:
I. Seonath
II. Hasdeo
III. Jonk
Which of the above are tributaries of the Mahanadi river?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

26. Where does the Mahanadi river originate?
(1) Sihawa in Chhattisgarh
(2) Mahabaleshwar in Maharashtra
(3) Trimbakeshwar in Maharashtra
(4) Amarkantak in Madhya Pradesh
(5) Question not attempted

27. Which of the following dams is NOT located on the Mahanadi river system?
(1) Hirakud Dam
(2) Dudhawa Dam
(3) Gangrel Dam
(4) Ukai Dam
(5) Question not attempted

28. Given below are two statements, one labeled as Assertion (A) and the other labeled as Reason (R):
Assertion (A): The Hirakud Dam was primarily constructed to control the devastating floods in the Mahanadi delta region.
Reason (R): The Mahanadi river carries a very low volume of silt, which prevents the natural moderation of floods during the monsoon.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

29. The Godavari river is often referred to as 'Dakshin Ganga' primarily due to its:
(1) Origin in the snow-clad peaks of the Western Ghats
(2) High agricultural productivity matching the Ganga basin
(3) Large size, extensive basin area, and length in South India
(4) Tendency to change its course frequently like the Ganga
(5) Question not attempted

30. Consider the following statements about the Godavari river and its tributaries:
I. The Pranhita is the largest tributary of the Godavari.
II. The Indravati river flows through the Bastar region.
III. The Manjira river joins the Godavari from the right bank.
IV. The Godavari river flows through the state of Karnataka.
Which of the above statement(s) is/are incorrect?
(1) IV only
(2) I and III only
(3) II and IV only
(4) I, II and III only
(5) Question not attempted

31. The Godavari river originates from which of the following locations?
(1) Trimbakeshwar near Nashik
(2) Brahmagiri hills in Kodagu
(3) Mahabaleshwar in Satara
(4) Sihawa in Raipur
(5) Question not attempted

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CHAPTER 09

Major Rivers and Lakes of India

1. What is the fundamental basis for the classification of Indian rivers into Himalayan and Peninsular systems?
(1) The total length of the various river channels
(2) Origin and evolutionary history of systems
(3) The total volume of water discharged annually
(4) General direction of flow towards the oceans
(5) Question not attempted

2. Consider the following statements regarding the characteristics of Himalayan rivers:
Statement I: They are predominantly perennial in nature.
Statement II: They receive water solely from the melting of glaciers in the higher altitudes.
Which of the following is correct in respect of the above statements?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

3. Which of the following is not a general characteristic of the Peninsular river systems in India?
(1) They have largely graded and shallow valleys
(2) They are older than the Himalayan rivers
(3) They exhibit highly meandering courses in their middle stages
(4) They are primarily rain-fed and seasonal in nature
(5) Question not attempted

4. Match List I with List II and select the correct answer using the codes given below:
List I: (River System)
A. Himalayan Rivers
B. Peninsular East-Flowing Rivers
C. Peninsular West-Flowing Rivers
D. Inland Drainage
List II: (Characteristics)
i. Form estuaries instead of deltas
ii. Drain into salt lakes or disappear in sand
iii. Form extensive deltas on the coast
iv. Antecedent and perennial in nature
Codes:
(1) A-iv, B-iii, C-i, D-ii
(2) A-iv, B-i, C-iii, D-ii
(3) A-ii, B-iii, C-iv, D-i
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

5. Consider the following statements regarding the Indus river system:
I. The Chenab is the largest tributary of the Indus.
II. The Sutlej originates from the Rakas lake in Tibet.
III. The Jhelum flows through the Wular Lake.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

6. Under the provisions of the Indus Water Treaty of 1960, India has exclusive rights over the waters of which of the following rivers?
(1) Indus, Jhelum, and Chenab
(2) Ravi, Beas, and Sutlej
(3) Chenab, Ravi, and Beas
(4) Jhelum, Sutlej, and Indus
(5) Question not attempted

7. Which of the following rivers is the odd one out based on its origin location?
(1) Jhelum
(2) Chenab

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(1) Karnataka, Andhra Pradesh, Tamil Nadu, and Maharashtra
(2) Kerala, Tamil Nadu, Andhra Pradesh, and Lakshadweep
(3) Karnataka, Tamil Nadu, Telangana, and Puducherry
(4) Tamil Nadu, Karnataka, Kerala, and Puducherry
(5) Question not attempted

40. Consider the following dams/reservoirs on the Kaveri river system:
I. Harangi Dam
II. Krishna Raja Sagara Dam
III. Mettur Dam
IV. Grand Anicut (Kallanai)
Which of the above is the correct sequence from upstream to downstream?
(1) I, II, III, IV
(2) II, I, IV, III
(3) I, III, II, IV
(4) III, II, I, IV
(5) Question not attempted

41. By definition, a rift valley river is one that flows through a linear-shaped lowland between several highlands. Which two ranges bound the Narmada rift valley?
(1) Aravalli and Vindhya
(2) Satpura and Ajanta
(3) Vindhya and Satpura
(4) Western Ghats and Eastern Ghats
(5) Question not attempted

42. Which of the following statements about the Narmada river is incorrect?
(1) It forms a broad and extensive delta at its mouth
(2) It originates from the Amarkantak plateau region
(3) It flows through the Marble Rocks near Jabalpur
(4) It forms the scenic Dhuandhar waterfall in MP
(5) Question not attempted

43. Identify the correctly matched pair of locations associated with the Narmada river:
(1) Origin point - Trimbakeshwar plateau region
(2) Waterfall type - High altitude Jog Falls
(3) Major Dam project - Large Hirakud Dam
(4) Estuary location - Gulf of Khambhat
(5) Question not attempted

44. Match List I with List II and select the correct answer using the codes given below:
List I: (West-Flowing River)
A. Narmada
B. Tapi
C. Luni
D. Sabarmati
List II: (Geographical Feature)
i. Flows between Vindhya and Satpura ranges
ii. Flows south of the Satpura range
iii. Disappears in the Rann of Kutch
iv. Originates in the Aravalli range
Codes:
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-ii, C-iii, D-i
(5) Question not attempted

45. Consider the following statements about the Tapi river:
I. It flows parallel to the Narmada river.
II. Its basin covers parts of Madhya Pradesh, Maharashtra, and Gujarat.
III. It is longer in length than the Narmada river.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

46. From where does the Tapi river originate?
(1) Sihawa in Raipur district
(2) Amarkantak in Anuppur district
(3) Mahabaleshwar in Satara district
(4) Multai in Betul district
(5) Question not attempted

47. Which of the following is an exception to the west-flowing rivers of the Peninsular plateau?
(1) Subarnarekha
(2) Tapi
(3) Mahi
(4) Periyar
(5) Question not attempted

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48. Given below are two statements, one labeled as Assertion (A) and the other labeled as Reason (R):
Assertion (A): The Narmada and Tapi rivers flow westwards into the Arabian Sea and do not form deltas.
Reason (R): They flow through fault-guided rift valleys with steep gradients and lack a broad coastal plain to deposit their sediments.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

49. The Luni river is sweet in its upper reaches but turns saline as it moves downstream. This concept is primarily applied to its flow after reaching which town in Rajasthan?
(1) Ajmer
(2) Balotra
(3) Jodhpur
(4) Barmer
(5) Question not attempted

50. Consider the following statements about the tributaries of the Luni river:
I. The Jojari is the only right-bank tributary of the Luni.
II. The Sukri, Bandi, and Jawai are left-bank tributaries.
III. All tributaries of Luni originate from the Aravalli hills without exception.
IV. The Luni river system forms an endorheic drainage basin.
Which of the above statement(s) is/are correct?
(1) I, II and IV only
(2) II, III and IV only
(3) I, II and III only
(4) I, III and IV only
(5) Question not attempted

51. Where does the Luni river originate?
(1) Rugged Vindhyan escarpment region
(2) High Bhor Ghat pass near Pune
(3) Pushkar valley of the Aravallis
(4) Dense Gir hills of Gujarat state
(5) Question not attempted

52. Identify the correct statement regarding the Luni river:
(1) It meets the sea directly at the Gulf of Mannar
(2) It forms a massive delta in the Gujarat coastal plains
(3) It remains highly flooded and perennial throughout the year
(4) It is an excellent example of an endorheic or inland drainage system
(5) Question not attempted

53. Identify the correctly matched pair of natural lakes and their respective states:
(1) Loktak Lake - Meghalaya
(2) Dal Lake - Himachal Pradesh
(3) Wular Lake - Jammu and Kashmir
(4) Chilika Lake - Andhra Pradesh
(5) Question not attempted

54. Match List I with List II and select the correct answer using the codes given below:
List I: (Lake)
A. Dal Lake
B. Loktak Lake
C. Chilika Lake
D. Sambhar Lake
List II: (Key Feature)
i. Floating islands called Phumdis
ii. Largest inland salt lake
iii. Largest coastal lagoon
iv. Urban lake famous for houseboats (Shikaras)
Codes:
(1) A-iv, B-i, C-iii, D-ii
(2) A-i, B-iv, C-ii, D-iii
(3) A-iv, B-iii, C-i, D-ii
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

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55. Consider the following statements regarding Loktak Lake:
I. It is located in the state of Manipur.
II. It is known for its floating circular swamps called phumdis.
III. Keibul Lamjao, the world's only floating national park, is situated here.
IV. It is the natural habitat of the endangered Sangai deer.
V. It is designated as a wetland of international importance under the Ramsar Convention.

Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

56. The Wular Lake, India's largest freshwater lake, was formed primarily due to:
(1) Tectonic activity
(2) Volcanic activity
(3) Glacial erosion
(4) River meandering
(5) Question not attempted

57. Which of the following is the largest coastal lagoon in India, recognized globally for its high ecological importance?
(1) Vembanad Lake
(2) Pulicat Lake
(3) Chilika Lake
(4) Ashtamudi Lake
(5) Question not attempted

58. Consider the following statements:
Statement I: Chilika Lake was the first Indian wetland of international importance under the Ramsar Convention.
Statement II: It hosts a significant population of the endangered Irrawaddy dolphins.
Which of the following is correct in respect of the above statements?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

59. The salinity of Chilika Lake undergoes significant seasonal variation. Which of the following is the best reason for this phenomenon?
(1) High evaporation rates occurring exclusively during winter months
(2) Deep submarine volcanic vents that periodically release salts
(3) Intensive salt farming practices carried out along its borders
(4) Mixing of inland river freshwater and seawater inflows
(5) Question not attempted

60. Which of the following represents the correct sequence of natural lakes from North to South in India?
(1) Wular, Dal, Sambhar, Chilika
(2) Dal, Wular, Chilika, Sambhar
(3) Wular, Sambhar, Dal, Chilika
(4) Dal, Sambhar, Wular, Chilika
(5) Question not attempted

61. The Wular Lake acts as a natural flood reservoir. This cause-and-effect mechanism is directly associated with which river?
(1) Indus
(2) Chenab
(3) Jhelum
(4) Ravi
(5) Question not attempted

62. The Tulbul Navigation Project, which was a subject of dispute between India and Pakistan, is located at the mouth of which lake?
(1) Dal Lake
(2) Pangong Tso
(3) Tso Moriri
(4) Wular Lake
(5) Question not attempted

63. Which of the following statements about Wular Lake is incorrect?
(1) Formed exclusively as an ox-bow lake of the Indus
(2) It remains the largest freshwater lake in India
(3) It is situated in the Bandipora district of J&K
(4) Its size varies significantly depending on the season
(5) Question not attempted

64. Match List I with List II and select the correct answer using the codes given below:
List I: (Lake/Reservoir)
A. Wular Lake
B. Gobind Sagar
C. Nagarjunasagar
D. Hirakud Reservoir
List II: (Associated River)

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49. (2) Balotra
The Luni river exhibits a unique hydrological characteristic where its water quality changes during its course. In the initial stages near the Aravalli range, the water remains relatively sweet and fresh. However, after it passes the town of Balotra in Rajasthan, the river picks up high concentrations of salt from the surrounding desert soil, causing the water to become saline.

50. (1) I, II and IV only
The Luni river system is primarily endorheic, meaning it does not reach the ocean. Its tributaries include the Jojari on the right bank and several others like the Sukri and Jawai on the left. While most of these rivers originate in the Aravallis, the Jojari is an exception as it rises from the plains, making it the only non-mountain tributary.

51. (3) Pushkar valley of the Aravallis
The Luni river is the most significant river in the arid western region of Rajasthan. It originates in the Pushkar valley of the Aravalli range, near the city of Ajmer. Initially known as the Sagarmati, it meets the Saraswati river before taking the name Luni. The river then flows southwest through the Thar Desert before terminating in the Rann.

52. (4) It is an excellent example of an endorheic or inland drainage system
The Luni is a classic example of an inland or endorheic drainage system in India. Unlike most rivers that drain into the sea, the Luni flows through the desert and eventually disappears into the marshy terrain of the Rann of Kutch. Its flow is seasonal and highly dependent on the erratic rainfall received in the Aravalli mountains and desert plains.

53. (3) Wular Lake - Jammu and Kashmir
India possesses a variety of natural lakes across its diverse states. Wular Lake is the largest freshwater lake in the country, located in Jammu and Kashmir. Loktak Lake is found in Manipur, Dal Lake is in Srinagar, and Chilika Lake is a famous lagoon in Odisha. These water bodies are essential for local ecosystems and support biodiversity and livelihoods.

54. (1) A-iv, B-i, C-iii, D-ii
Dal Lake is famous for its scenic beauty and the traditional Shikara houseboats used by tourists. Loktak Lake in Manipur is unique for its floating islands known as Phumdis. Chilika Lake in Odisha is recognized as the largest coastal lagoon in India. Sambhar Lake in Rajasthan is the country's largest inland salt lake, serving as a major salt production site.

55. (4) I, II, III, IV and V
Loktak Lake in Manipur is a wetland of immense ecological value and a designated Ramsar site. It is characterized by floating masses of vegetation called phumdis. The Keibul Lamjao National Park, the only floating park in the world, is located here. This unique ecosystem serves as the final natural refuge for the endangered brow-antlered deer, locally known as the Sangai.

56. (1) Tectonic activity
Wular Lake in Jammu and Kashmir is the largest freshwater lake in India. Its formation is attributed to tectonic activity, where a portion of the earth's crust subsided to create a large depression. This depression was subsequently filled by the waters of the Jhelum river. This tectonic origin distinguishes it from lakes formed purely by glacial erosion or river meandering.

57. (3) Chilika Lake
Chilika Lake, located on the east coast in Odisha, is the largest coastal lagoon in India and the second largest in the world. It is a brackish water lake separated from the Bay of Bengal by a narrow spit. Recognized for its ecological importance, it was the first Indian wetland to be designated under the Ramsar Convention for international conservation.

58. (1) Both Statement I and Statement II are correct
Chilika Lake holds the distinction of being the first Indian site designated under the Ramsar Convention. This vast lagoon is a biodiversity hotspot and provides a critical habitat for numerous migratory birds. Additionally, it is one of the few places in the world where the endangered Irrawaddy dolphins can be found, making it a site of global conservation significance.

59. (4) Mixing of inland river freshwater and seawater inflows
The salinity levels in Chilika Lake fluctuate throughout the year due to the interplay

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(3) A wide meander is cut off, creating a separate body of water
(4) Volcanic craters collapse and eventually fill with rainwater
(5) Question not attempted

74. Match List I with List II and select the correct answer using the codes given below:
List I: (Fluvial Feature)
A. Estuary
B. Delta
C. Ox-bow Lake
D. Gorge
List II: (Associated River/Region)
i. Brahmaputra (Namcha Barwa)
ii. Narmada
iii. Ganga (Sunderbans)
iv. Burhi Gandak plains
Codes:
(1) A-ii, B-iii, C-iv, D-i
(2) A-iii, B-ii, C-i, D-iv
(3) A-ii, B-iv, C-iii, D-i
(4) A-i, B-iii, C-iv, D-ii
(5) Question not attempted

75. Consider the following statements regarding Ox-bow lakes in the Ganga plains:
I. They are formed due to the highly meandering nature of mature rivers.
II. They represent abandoned river channels.
III. They are most commonly found in the upper, youthful courses of the rivers.
IV. Kanwar Lake in Bihar is an example of a large freshwater ox-bow lake.
V. They are naturally prone to eutrophication and siltation over time.
Which of the above statement(s) is/are correct?
(1) I, II, IV and V only
(2) I, II, III and V only
(3) II, III, IV and V only
(4) I, III, IV and V only
(5) Question not attempted

76. The middle and lower Ganga plains have an abundance of ox-bow lakes. This concept implies that the terrain is:
(1) Highly elevated terrain with a steep, narrow gradient
(2) Flat with gentle gradients, causing extensive meandering
(3) Characterized by hard rocky structures preventing erosion
(4) Subjected to frequent and intense tectonic upliftments
(5) Question not attempted

77. Which of the following was the first major river interlinking project to receive structural approval and implementation focus in India?
(1) Kosi-Mechi Link
(2) Par-Tapi-Narmada Link
(3) Ken-Betwa Link
(4) Godavari-Krishna Link
(5) Question not attempted

78. Consider the following statements regarding river interlinking:
Statement I: The primary rationale behind the river interlinking project is to transfer water from water-surplus basins to water-deficit basins.
Statement II: All Peninsular rivers are considered water-surplus, while Himalayan rivers are considered water-deficit.
Which of the following is correct in respect of the above statements?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

79. Which of the following is considered the most appropriate and serious environmental challenge associated with river interlinking projects?
(1) Ecological disruption, forest loss, and community displacement
(2) It will cause all rivers to dry up before reaching the sea
(3) Complete destruction of river navigation potential nationwide
(4) Creation of new international border disputes over sharing
(5) Question not attempted

80. Consider the following proposed river interlinking projects in India:

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i. Sutlej
ii. Jhelum
iii. Mahanadi
iv. Krishna
Codes:
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

65. Consider the following rivers:
I. Mendha
II. Rupangarh
III. Khari
Which of the above statement(s) regarding rivers that feed the Sambhar Lake is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

66. Sambhar Lake is geographically located in which state and holds what conservation status?
(1) Rajasthan, Ramsar Wetland Site
(2) Gujarat, UNESCO World Heritage Site
(3) Haryana, National Park
(4) Punjab, Biosphere Reserve
(5) Question not attempted

67. Which of the following lakes is responsible for the highest inland salt production in India?
(1) Pachpadra Lake
(2) Didwana Lake
(3) Sambhar Lake
(4) Lunkaransar Lake
(5) Question not attempted

68. Given below are two statements, one labeled as Assertion (A) and the other labeled as Reason (R):
Assertion (A): Sambhar Lake is the largest inland saltwater lake in India and a major site for salt production.
Reason (R): It receives water from an endorheic basin with high summer evaporation rates, which concentrates the dissolved salts.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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69. Identify the incorrectly matched pair of man-made reservoirs and their associated rivers:
(1) Gobind Sagar - Sutlej
(2) Nagarjunasagar - Krishna
(3) Rana Pratap Sagar - Narmada
(4) Gandhi Sagar - Chambal
(5) Question not attempted

70. Consider the following statements about Gobind Sagar reservoir:
I. It is formed by the Bhakra Dam.
II. It is situated on the river Sutlej.
III. It lies geographically in the state of Himachal Pradesh.
IV. It was named in honor of the tenth Sikh Guru, Guru Gobind Singh.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, II, III and IV
(3) II, III and IV only
(4) I and IV only
(5) Question not attempted

71. Which of the following is NOT a man-made reservoir?
(1) Gobind Ballabh Pant Sagar
(2) Krishnarajasagara
(3) Nagarjunasagar
(4) Loktak
(5) Question not attempted

72. The Nagarjunasagar reservoir, one of the earliest multi-purpose irrigation and hydro-electric projects in India, is built across which river?
(1) Krishna
(2) Godavari
(3) Kaveri
(4) Tungabhadra
(5) Question not attempted

73. By definition, an ox-bow lake is a U-shaped body of water that forms when:
(1) Glaciers retreat, leaving deep depressions that fill with water
(2) Tectonic plates shift, creating deep fault valleys that collect rain

ANSWERS

1. (2) Origin and evolutionary history of systems
Indian rivers are categorized based on their place of origin and geological history. Himalayan rivers originate from the high mountains, influenced by tectonic activities and glacial melt. Conversely, Peninsular rivers are much older, originating from the plateau region. This distinction defines their unique geomorphological features, drainage patterns, and flow regimes across the subcontinent.

2. (3) Statement I is correct but Statement II is incorrect
Himalayan rivers are perennial because they receive water from two distinct sources throughout the year. During the summer months, the melting of high-altitude glaciers provides a steady flow. In the monsoon season, heavy rainfall significantly augments their discharge. This dual supply distinguishes them from seasonal rivers that depend solely on annual rainfall for their sustenance.

3. (3) They exhibit highly meandering courses in their middle stages
Peninsular rivers are geologically older and have reached a mature stage of development. Their courses are characterized by broad, shallow, and graded valleys with a fixed path. Unlike Himalayan rivers that traverse soft mountain strata and create deep meanders, Peninsular rivers flow through hard crystalline rocks, which prevents significant meandering and results in relatively straight channel patterns.

4. (1) A-iv, B-iii, C-i, D-ii
Himalayan systems are antecedent, meaning they existed before the mountain ranges were fully uplifted. East-flowing Peninsular rivers carry heavy sediment loads that form large deltas at the coast. West-flowing rivers move through steep rift valleys, entering the sea via narrow estuaries. Inland drainage systems typically terminate in salt lakes or dissipate within arid desert sands.

5. (4) I, II and III
The Chenab serves as the most significant tributary of the Indus by volume. The Sutlej begins its journey at the Rakas lake in the Tibetan plateau before entering India. The Jhelum traverses the Kashmir Valley and passes through the Wular Lake. All these rivers form vital components of the extensive Indus basin drainage network.

6. (2) Ravi, Beas, and Sutlej
The Indus Water Treaty allocated the usage of the six major rivers between India and Pakistan. According to this international agreement, India was granted exclusive rights to utilize the waters of the three eastern rivers. These specific rivers are the Ravi, Beas, and Sutlej. This distribution ensures water security for irrigation and power projects in northwestern India.

7. (4) Sutlej
Most major tributaries of the Indus river system, such as the Jhelum, Chenab, and Ravi, originate within the Indian Himalayan region. However, the Sutlej is an exception as its source lies outside the Indian borders. It rises from the Rakas lake near the Mansarovar region in Tibet, making it an antecedent river in the system.

8. (1) Both A and R are true and R is the correct explanation of A.
Antecedent drainage refers to rivers that maintain their original course despite the upliftment of the surrounding land. The Indus and its tributaries existed before the Himalayas rose. As the mountains were pushed upward, these powerful rivers eroded the rising rock at the same rate. This continuous process resulted in the formation of exceptionally deep and narrow gorges.

9. (3) Devprayag
The Ganga is formed by the confluence of two primary headstreams in the high Himalayas. The Alaknanda river meets the Bhagirathi river at a sacred location known as Devprayag in Uttarakhand. From this point onward, the combined flow is officially recognized as the

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and cultural importance to the region mirror the role that the Ganga plays in the northern plains of the country.

30. (1) IV only
The Godavari is the largest river system in the Peninsular region, with major tributaries like the Pranhita, Indravati, and Manjira. The Indravati is famous for its course through the Bastar region, and the Manjira joins from the south. While its basin is vast, the main river flows through Maharashtra, Telangana, and Andhra Pradesh, but it does not enter Karnataka.

31. (1) Trimbakeshwar near Nashik
The Godavari originates in the Western Ghats of Maharashtra. The specific source is located at Trimbakeshwar in the Nashik district. This point marks the start of a 1,465-kilometer journey across the Deccan plateau toward the east coast. As a perennial source in a rain-fed region, this origin is of great hydrological and religious importance for the entire peninsula.

32. (2) Tamil Nadu
The Godavari basin is the largest in Peninsular India, spanning approximately ten percent of the country's total area. Its catchment covers significant parts of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh, and Odisha. Small portions also lie in Madhya Pradesh and Karnataka. However, the drainage area of the Godavari does not extend into the southern state of Tamil Nadu at any point.

33. (2) Mahabaleshwar
The Krishna river is the second largest east-flowing river in the Peninsular plateau. Its source is a natural spring located near the hill station of Mahabaleshwar in the Sahyadri range of Maharashtra. From this high-altitude origin, the river flows through Karnataka and Telangana before reaching Andhra Pradesh, where it finally discharges into the deep waters of the Bay of Bengal.

34. (1) A-ii, B-i, C-iv, D-iii
The Krishna river system hosts several major hydroelectric and irrigation projects. Nagarjunasagar is located on the border of Andhra Pradesh and Telangana. Almatti is a significant dam in Karnataka. Srisailam is situated in a deep gorge within the Nallamala hills. The Tungabhadra dam is built on a major right-bank tributary that shares the same name as the dam itself.

35. (4) I, II, III, IV and V
The Krishna is the second largest east-flowing peninsular river, featuring major tributaries like the Bhima, Tungabhadra, and Musi. The Koyna dam is built on the Koyna river, which is a significant feeder in the upper reaches. Finally, the Krishna and Godavari rivers have expanded their deltas to the point where they appear to form a single, continuous coastal plain.

36. (4) High temporal variability in rainfall and extensive agricultural water demands
Disputes over the Krishna river waters among Maharashtra, Karnataka, Telangana, and Andhra Pradesh are primarily driven by the uneven distribution of water resources. The river exhibits high temporal variability in flow due to monsoon dependence. Simultaneously, the riparian states have massive and growing demands for irrigation and industrial use, leading to frequent conflicts over water allocation and storage projects.

37. (3) Upper and lower catchments receive rain from different monsoons
Unlike other peninsular rivers that are purely monsoon-dependent, the Kaveri maintains a more consistent water level. Its upper catchment area in Karnataka receives heavy rainfall from the southwest monsoon during the summer. Meanwhile, its lower catchment in Tamil Nadu benefits from the retreating northeast monsoon in winter. This dual rainfall pattern ensures a relatively steady flow of water throughout the year.

38. (1) Both Statement I and Statement II are correct
The Kaveri river originates in the Brahmagiri hills of the Western Ghats in Karnataka. During its journey across the plateau, it creates several notable geographical features. One of the most famous is the Sivasamudram waterfalls, which is also the site of one of India's earliest hydroelectric power stations. These characteristics make the Kaveri a vital river for the region.

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20. (1) Lohit, Dibang, Subansiri, Kameng
The Brahmaputra receives numerous tributaries as it flows from east to west through the Assam valley. The Lohit is the easternmost major tributary, followed by the Dibang. As the river continues its westward journey, it is joined by the Subansiri and subsequently by the Kameng. This sequence reflects the spatial distribution of the river's northern and eastern feeders.

21. (3) General plateau gradient from west to east
The direction of river flow is primarily determined by the topographical tilt of the land. The Peninsular plateau of India is characterized by a general geological gradient that slopes from the west toward the east. Consequently, the majority of large rivers originating in the Western Ghats follow this natural incline, eventually draining their waters into the Bay of Bengal.

22. (2) Flow through hard rocks and rift valleys, reducing sediment
West-flowing rivers like the Narmada and Tapi travel through hard rock terrains and deep rift valleys. Their steep gradients and short courses toward the Arabian Sea limit the amount of sediment they can collect and deposit. Instead of forming expansive deltas, these rivers enter the sea through estuaries, where the high-velocity freshwater directly mixes with the ocean water.

23. (4) They are characterized by fixed courses and absence of meanders
Peninsular rivers are geologically older and have achieved a graded profile over millions of years. They are characterized by relatively straight and fixed courses because they flow through hard, stable rock structures. Unlike the meandering Himalayan rivers that constantly shift in soft alluvial soil, Peninsular systems exhibit a lack of meanders and maintain consistent paths across the plateau.

24. (1) A-iii, B-ii, C-iv, D-i
The Godavari is the largest peninsular river, draining a massive basin. The Krishna basin is shared by Maharashtra, Karnataka, Telangana, and Andhra Pradesh. The Mahanadi basin is concentrated primarily within Chhattisgarh and Odisha. Unlike these east-flowing rivers, the Narmada flows westward through a prominent rift valley situated between the Vindhya and Satpura mountain ranges in central India.

25. (4) I, II and III
The Mahanadi is a major east-flowing river that drains the central Indian plateau. Its drainage network includes several important tributaries that join from both banks. Notable feeders like the Seonath and Hasdeo contribute significant water volume from the north. The Jonk is another vital tributary. Together, these rivers support extensive agriculture and industry across Chhattisgarh and Odisha.

26. (1) Sihawa in Chhattisgarh
The Mahanadi river begins its journey in the highlands of Chhattisgarh. The specific origin point is located near Sihawa in the Dhamtari district. From this region, the river flows in a northeasterly direction before turning east to traverse the state of Odisha. It eventually forms a massive delta and empties into the Bay of Bengal near the city of Cuttack.

27. (4) Ukai Dam
The Mahanadi river system features several large-scale water management projects. The Hirakud Dam is a famous landmark on the main river, while the Dudhawa and Gangrel dams are also part of its extensive basin in Chhattisgarh. In contrast, the Ukai Dam is situated on the Tapi river in Gujarat, serving entirely different agricultural and power needs in western India.

28. (3) A is true but R is false.
The Hirakud Dam was constructed as a multi-purpose project to mitigate the catastrophic flooding that historically plagued the Mahanadi delta. The river actually carries a very high volume of silt, which often leads to the clogging of channels and increased flood risks. Therefore, the assertion about flood control is correct, but the reason regarding low silt levels is factually incorrect.

29. (3) Large size, extensive basin area, and length in South India
The Godavari is frequently called 'Dakshin Ganga' due to its immense geographical significance in the southern part of India. It is the longest river in the peninsula and possesses the largest drainage basin among all southern systems. Its vast scale

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Ganga. This mountain meeting point marks the beginning of India's most significant river system.

10. (3) IV only
The Ganga river enters the fertile plains at Haridwar and eventually flows through several states, including a small portion of Jharkhand. Its distributary, the Hooghly, remains within West Bengal. However, the meeting point of the Ganga and Brahmaputra is located at Goalundo in Bangladesh, not at Dhubri, which is where the Brahmaputra enters Bangladesh from India.

11. (4) Yamuna
The Yamuna is the longest and most important right-bank tributary of the Ganga. It originates from the Yamunotri glacier in the Banderpunch range of the Himalayas. Flowing parallel to the main river for nearly eight hundred miles, it eventually merges with the Ganga at the holy confluence in Prayagraj. It drains a massive portion of northern India.

12. (2) Nandaprayag - Bhagirathi and Mandakini
The Alaknanda river has several key confluences known as Prayags in the mountain region. While Rudraprayag involves the Mandakini and Vishnuprayag involves the Dhauliganga, Nandaprayag is specifically the junction where the Alaknanda meets the Nandakini river. Bhagirathi and Mandakini do not meet at Nandaprayag, as the Bhagirathi follows a separate path until it reaches the main Alaknanda.

13. (3) It frequently changes its course, causing massive floods
The Kosi river is notoriously unstable because it carries an enormous volume of silt and sediment from the high Himalayas. This heavy deposition causes the riverbed to rise, forcing the water to frequently change its course across the plains. These unpredictable shifts lead to catastrophic flooding over vast agricultural lands, earning the river its tragic historical title.

14. (1) A-iv, B-ii, C-iii, D-i
The Yamuna is the longest right-bank tributary of the Ganga. The Ghaghara rises in the Mapchachungo glacier and brings significant water to the plains. The Gandak river flows through the border region of Uttar Pradesh and Bihar. The Kosi is famous for its seven distinct mountain streams, which are collectively referred to as the Sapt Kosi.

15. (4) I, II, III, IV and V
The Yamuna originates from the Banderpunch range and joins the Ganga at Prayagraj. Its network includes the Chambal on the right bank and the Hindon on the left. Furthermore, it passes through the mountainous terrain of Himachal Pradesh before reaching the plains. These diverse characteristics make the Yamuna one of the most complex and vital river systems.

16. (2) It joins the Ganga right at the city of Varanasi
The Gandak river is formed by the union of the Kali Gandak and the Trishul Ganga. It originates in the high Nepal Himalayas and enters the Indian plains through the Champaran district of Bihar. While it is a major tributary of the Ganga, it joins the main river at Sonpur near Patna, rather than at Varanasi.

17. (2) Jamuna
The Brahmaputra undergoes several name changes during its long journey. It is known as the Tsangpo in Tibet and the Dihang when entering India. Upon crossing the border into Bangladesh, the river is referred to as the Jamuna. Eventually, it merges with the Ganga and later the Meghna before discharging its waters into the Bay of Bengal.

18. (1) Braided channel carrying high silt loads
The Brahmaputra is a braided river across most of its course in Assam. It carries a massive amount of silt and sediment due to high rainfall and erosion in the catchment area. This heavy siltation leads to the formation of large riverine islands. Majuli is the most prominent example, being the largest freshwater island of its kind.

19. (1) Both Statement I and Statement II are correct
The Brahmaputra flows eastward through Tibet parallel to the Himalayas. At the eastern extremity of the mountain range, it encounters the formidable Namcha Barwa peak. This structural feature forces the river to make a sharp southward U-turn. Through this deep gorge, the river enters the Indian state of Arunachal Pradesh, where it is locally known as the Dihang.

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39. (4) Tamil Nadu, Karnataka, Kerala, and Puducherry
The sharing of Kaveri river water has been a long-standing legal and political issue in South India. The primary stakeholders involved in this complex dispute are the states of Karnataka, Tamil Nadu, and Kerala, along with the Union Territory of Puducherry. These regions compete for water to support their vast agricultural networks, particularly for water-intensive crops like paddy.

40. (1) I, II, III, IV
The Kaveri river flows from the Western Ghats toward the Bay of Bengal. In its upstream section in Karnataka, the Harangi and Krishna Raja Sagara dams are located. Moving downstream into Tamil Nadu, the river passes through the Mettur Dam. Finally, near the delta region, the ancient Grand Anicut, or Kallanai, serves as a crucial structure for water distribution.

41. (3) Vindhya and Satpura
A rift valley is a linear lowland formed by the sinking of land between parallel faults. The Narmada river flows through such a valley in central India. This valley is structurally bounded by the Vindhya range to the north and the Satpura range to the south. This unique geological setting dictates the river's westward course toward the Arabian Sea.

42. (1) It forms a broad and extensive delta at its mouth
The Narmada river originates from the Amarkantak plateau and flows west through a rift valley. It is famous for the Marble Rocks and the Dhuandhar waterfalls near Jabalpur. Because it flows through hard rocks and has a steep gradient near the coast, it does not deposit enough sediment to form a delta. Instead, it enters the sea via an estuary.

43. (4) Estuary location - Gulf of Khambhat
The Narmada is a major west-flowing river that originates in the Amarkantak region of Madhya Pradesh. It creates several scenic features along its path, such as the Dhuandhar falls. Unlike east-flowing rivers, it does not form a delta. It eventually reaches the end of its journey by creating a significant estuary at the Gulf of Khambhat in the Arabian Sea.

44. (1) A-i, B-ii, C-iii, D-iv
The Narmada flows through the rift valley between the Vindhya and Satpura ranges. The Tapi follows a parallel path to the south of the Satpuras. The Luni is an inland river that eventually disappears into the marshy Rann of Kutch. The Sabarmati originates in the Aravalli range and flows south through Gujarat to reach the Gulf of Khambhat.

45. (1) I and II only
The Tapi is a major west-flowing river that runs parallel to the Narmada. Its basin is shared by the states of Madhya Pradesh, Maharashtra, and Gujarat. Although it is a significant river, it is much shorter in length compared to the Narmada. Both rivers are unique because they flow westwards, contrary to the general eastward slope of the Indian peninsula.

46. (4) Multai in Betul district
The Tapi river has its source in the Satpura ranges of central India. It specifically originates from the Multai reserve forest in the Betul district of Madhya Pradesh. From this point, it flows westward for about seven hundred kilometers through a valley south of the Narmada. It eventually drains into the Arabian Sea near the industrial city of Surat.

47. (1) Subarnarekha
The Narmada, Tapi, Mahi, and Periyar are all notable rivers that flow westward into the Arabian Sea or local gulfs. However, the Subarnarekha is an exception among these. It originates in the Chota Nagpur plateau and flows in an easterly direction through Jharkhand, West Bengal, and Odisha before emptying its waters into the Bay of Bengal on the east coast.

48. (1) Both A and R are true and R is the correct explanation of A.
The Narmada and Tapi are west-flowing rivers that do not form deltas at their mouths. This is because they traverse through narrow, fault-guided rift valleys with very steep gradients. This geological structure prevents the rivers from carrying and depositing large amounts of sediment over a wide coastal plain. Consequently, they form estuaries where they meet the Arabian Sea directly.

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I. Ken-Betwa Link
II. Kosi-Mechi Link
III. Godavari-Krishna Link
IV. Par-Tapi-Narmada Link

Which of the above represents the correct sequence from North to South based on their primary geographical locations?

(1) II, I, IV, III
(2) I, II, III, IV
(3) II, IV, I, III
(4) I, IV, II, III
(5) Question not attempted

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between freshwater and seawater. During the monsoon, numerous inland rivers discharge massive amounts of freshwater into the lagoon, significantly lowering its salinity. In contrast, during the dry season, the inflow of seawater from the Bay of Bengal through the narrow opening increases the salt concentration.

60. (1) Wular, Dal, Sambhar, Chilika
India's natural lakes are distributed across the country from the northern mountains to the eastern coast. Wular and Dal lakes are located in the northernmost region of Jammu and Kashmir. Moving southwards, Sambhar Lake is situated in the desert state of Rajasthan. Further towards the southeast, Chilika Lake is found along the coastal plains of the state of Odisha.

61. (3) Jhelum
Wular Lake plays a critical role in the hydrology of the Kashmir Valley. It is directly fed by the Jhelum river and serves as a natural flood control reservoir. During periods of heavy rainfall or rapid snowmelt, the lake absorbs the excess discharge from the river. This process helps in regulating the flow and preventing severe flooding in the downstream areas.

62. (4) Wular Lake
The Tulbul Navigation Project is a major water control structure located at the mouth of Wular Lake in Jammu and Kashmir. The project was designed by India to regulate the flow of the Jhelum river and maintain a minimum water depth for navigation. However, it became a point of contention with Pakistan, which raised objections under the Indus Water Treaty.

63. (1) Formed exclusively as an ox-bow lake of the Indus
Wular Lake is the largest freshwater lake in India, situated in the Bandipora district of Jammu and Kashmir. Its size changes according to the seasons and the inflow from the Jhelum river. While it exhibits fluvial characteristics, its primary origin is tectonic. It was formed by crustal subsidence rather than being exclusively an abandoned meander of the Indus.

64. (1) A-ii, B-i, C-iv, D-iii
Wular Lake is naturally associated with the Jhelum river in the Kashmir region. Gobind Sagar is a large man-made reservoir formed by the Bhakra Dam on the Sutlej. Nagarjunasagar is built across the Krishna river for irrigation and power. The Hirakud reservoir is situated on the Mahanadi river in Odisha, serving as one of the world's longest earthen dams.

65. (4) I, II and III
Sambhar Lake is an endorheic salt lake in Rajasthan that receives water from several seasonal rivers. These rivers carry dissolved salts from the surrounding drainage basin into the lake. Key tributaries that feed this system include the Mendha, Rupangarh, and Khari rivers. Together, they maintain the water level and contribute to the high salinity required for commercial salt production.

66. (1) Rajasthan, Ramsar Wetland Site
Sambhar Lake is geographically situated in the state of Rajasthan, near the city of Jaipur. It is recognized as India's largest inland salt lake and plays a vital role in the regional economy. Due to its ecological significance as a habitat for flamingos and other migratory birds, it has been designated as a wetland of international importance under the Ramsar Convention.

67. (3) Sambhar Lake
Rajasthan contains several saltwater lakes, but Sambhar Lake is the most prominent. It is the largest inland saltwater body in India and accounts for a significant portion of the country's total salt output. The high evaporation rates in the desert climate concentrate the brine, making it an ideal location for large-scale salt extraction through traditional and industrial methods.

68. (1) Both A and R are true and R is the correct explanation of A.
Sambhar Lake is the largest inland saltwater lake in India and a vital center for salt production. It functions as part of an endorheic basin, where water flows in but does not drain into the sea. The intense summer heat leads to rapid evaporation, which leaves behind concentrated dissolved salts. This natural process is the fundamental cause of the lake's high salinity.

69. (3) Rana Pratap Sagar - Narmada
Several large dams in India have created massive man-made reservoirs. Gobind Sagar is on the

subcontinent
(3) It generates intense tropical cyclones in the surrounding Arabian Sea
(4) It causes sudden and rapid warming of the northern plains
(5) Question not attempted

45. Identify the correctly matched pair representing the branches of the retreating monsoon and their primary impact areas.
(1) Arabian Sea branch - Coastal Gujarat
(2) Bay of Bengal branch - Northern Punjab
(3) Northeast Monsoon - Coastal Tamil Nadu
(4) Western Disturbances - Coromandel Coast
(5) Question not attempted

46. Consider the following statements regarding the climate of Rajasthan:
I. The western part of the state experiences an arid climate with extremely high diurnal temperature ranges.
II. The eastern part of Rajasthan receives relatively higher rainfall due to the Bay of Bengal monsoon branch.
III. Winter rainfall in Rajasthan is completely non-existent.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) II only
(3) III only
(4) I and II only
(5) Question not attempted

47. Which latitude roughly passes through the middle of India, dividing the country into tropical and sub-tropical climatic zones?
(1) Tropic of Cancer
(2) Equator
(3) Tropic of Capricorn
(4) Arctic Circle
(5) Question not attempted

48. In the context of the Indian monsoon, the term 'ITCZ' stands for:
(1) Inter-Tropic Climate Zone
(2) Inter-Tropical Convergence Zone
(3) Indian Tropical Cyclonic Zone
(4) International Trade and Convergence Zone
(5) Question not attempted

49. Match List I with List II and select the correct answer using the codes given below:
List I: (Regions)
A. Extreme Western Rajasthan
B. Interior Deccan Plateau
C. Eastern Gangetic Plains
D. Western Coastal Plains
List II: (Average Annual Rainfall)
i. Less than 20 cm
ii. 50 cm to 100 cm
iii. 100 cm to 200 cm
iv. More than 250 cm
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

50. What is meant by the 'Retreating Monsoon' in the context of the Indian climate?
(1) Withdrawal of southwest monsoon from northern plains
(2) The forceful push of oceanic winds inland during peak summer periods
(3) The sudden cessation of rainfall due to the regional El Niño effect
(4) The winter rains brought by the continental western disturbances
(5) Question not attempted

51. Which of the following states is not a major beneficiary of the pre-monsoon 'Mango Showers'?
(1) Kerala
(2) Karnataka
(3) Punjab
(4) Goa
(5) Question not attempted

52. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): The monsoon rainfall in India is highly uneven and unpredictable.
Reason (R): The movement of the monsoon trough and the occurrence of tropical depressions strongly govern the spatial distribution of rainfall.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.

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79. (1) Ecological disruption, forest loss, and community displacement

River interlinking is a massive structural undertaking that presents several serious environmental and social challenges. The most significant concerns include the large-scale loss of forest cover and the disruption of local riverine ecosystems. Furthermore, the construction of canals and reservoirs often leads to the displacement of local communities, requiring extensive rehabilitation and causing long-term socio-economic impacts on populations.

80. (1) II, I, IV, III

Proposed river interlinking projects are distributed across India based on regional water needs. From north to south, the Kosi-Mechi Link is located in the Himalayan foothills. The Ken-Betwa Link connects rivers in central India. Further south, the Par-Tapi-Narmada Link is planned in the western region, while the Godavari-Krishna Link involves the two largest rivers of the southern Peninsular plateau.

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15. If the Aravali Range had an east-west alignment instead of southwest-northeast, what would be the most likely impact on the climate of Rajasthan?
(1) Increased rainfall from the Arabian Sea monsoon branch
(2) Rajasthan would experience severe cold waves throughout the entire year
(3) The Thar Desert would expand further south into the Gujarat region
(4) The eastern parts of India would experience massive and prolonged droughts
(5) Question not attempted

16. Consider the following statements regarding the retreat of the monsoon in India:
I. The retreat of the monsoon is marked by clear skies and a rise in temperature.
II. It generally begins in early September in northwestern India.
III. The weather phenomenon associated with it is commonly known as October Heat.
IV. During this season, the low-pressure trough shifts rapidly from the Bay of Bengal to the northern plains.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

17. The Bay of Bengal branch of the southwest monsoon provides rainfall to several regions. Which of the following regions does not receive major rainfall from this branch?
(1) Lower Brahmaputra Valley
(2) Saurashtra region
(3) Upper Gangetic Plains
(4) Eastern Meghalaya Plateau
(5) Question not attempted

18. The sudden and intense onset of rainfall associated with violent thunder and lightning during the first week of June in southern India is technically referred to as what?
(1) Burst of the Monsoon
(2) Permanent Monsoon Trough
(3) Extended Break in Monsoon
(4) Seasonal Retreating Monsoon
(5) Question not attempted

19. Match List I with List II and select the correct answer using the codes given below:
List I: (Climatic Phenomenon)
A. Break in Monsoon
B. October Heat
C. Western Disturbances
D. Northeast Monsoon
List II: (Associated Feature/Region)
i. Winter rainfall in Tamil Nadu
ii. Dry spells during the rainy season
iii. Oppressive weather due to high temperature and humidity
iv. Winter rainfall in Northwest India
(1) A-ii, B-iii, C-iv, D-i
(2) A-iii, B-ii, C-i, D-iv
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

20. Which prominent topographic feature forces the Bay of Bengal branch of the southwest monsoon to deflect towards the west over the Gangetic plains?
(1) The Aravali Range
(2) The Western Ghats
(3) The Vindhya Range
(4) The Himalayas
(5) Question not attempted

21. Read the following statements regarding the Northeast Monsoon and select the correct option.
Statement I: The Northeast monsoon winds are continental and generally dry as they blow from land to sea.
Statement II: These winds gather moisture while crossing the Bay of Bengal and cause winter rainfall in Tamil Nadu.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

22. Consider the following statements regarding the Western Disturbances:
I. They are shallow cyclonic depressions

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iii. West Bengal
iv. Rajasthan and Punjab
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

8. The term monsoon is derived from the Arabic word mausim. What does this word literally mean?
(1) Season
(2) Wind currents
(3) Rain showers
(4) Storm systems
(5) Question not attempted

9. Which among the following is the most appropriate reason for the origin of the Southwest Monsoon in India?
(1) The intense high-pressure system developed over the Tibetan plateau
(2) The shift of the westerlies towards the equator
(3) The differential heating and cooling of land and water
(4) The generation of strong cold currents in the Indian Ocean
(5) Question not attempted

10. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): The western coastal plains of India receive significantly higher rainfall than the interior parts of the Deccan Plateau during the southwest monsoon season.
Reason (R): The Western Ghats act as an orographic barrier causing the moisture-laden winds from the Arabian Sea to rise and precipitate on the windward side.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

11. What is the geographical phenomenon known as 'Monsoon Trough'?
(1) An elongated area of high pressure over the Indian Ocean region
(2) The sudden onset of intense rainfall in the coastal regions
(3) The geographical gap between the Eastern and Western Ghats
(4) Low-pressure area over northern plains in summer
(5) Question not attempted

12. Regarding the onset of the southwest monsoon, which statement is correct?
(1) The Bay of Bengal branch is the first to reach the Indian mainland before the Arabian Sea branch.
(2) The monsoon typically sets over the Kerala coast by the first week of June.
(3) The monsoon winds move from north to south across the Indian subcontinent.
(4) The onset of the monsoon is entirely independent of the Inter-Tropical Convergence Zone (ITCZ).
(5) Question not attempted

13. Which of the following represents the correct general chronological sequence of the onset of the Southwest monsoon over the given regions?
(1) Andaman & Nicobar Islands, Kerala Coast, Mumbai, Delhi
(2) Kerala Coast, Mumbai, Andaman & Nicobar Islands, Delhi
(3) Mumbai, Andaman & Nicobar Islands, Kerala Coast, Delhi
(4) Andaman & Nicobar Islands, Mumbai, Kerala Coast, Delhi
(5) Question not attempted

14. Which of the following pairs relating to the branches of the southwest monsoon is incorrectly matched?
(1) Arabian Sea Branch - Causes significant rainfall in the Western Ghats
(2) Bay of Bengal Branch - Deflected westward by the Himalayan mountains
(3) Bay of Bengal Branch - Causes heavy rainfall in the Purvanchal hills region
(4) Arabian Sea Branch - Rain on Coromandel Coast
(5) Question not attempted

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Sutlej, and Nagarjunasagar is on the Krishna. The Gandhi Sagar dam is located on the Chambal river. Similarly, the Rana Pratap Sagar is also built on the Chambal river in Rajasthan. It is not associated with the Narmada river, which has different projects like Sardar Sarovar.

70. (2) I, II, III and IV
Gobind Sagar is a massive man-made reservoir created by the construction of the Bhakra Dam. It is located on the Sutlej river in the state of Himachal Pradesh. Named after Guru Gobind Singh, the tenth Sikh Guru, the reservoir is a critical component of the Bhakra-Nangal project. It provides water for irrigation and generates hydroelectric power for several northern states.

71. (4) Loktak
Man-made reservoirs are created by damming rivers for human use. Gobind Ballabh Pant Sagar, Krishnarajasagara, and Nagarjunasagar are all examples of such artificial water bodies. In contrast, Loktak Lake in Manipur is a natural freshwater lake. It is renowned for its unique ecosystem, including floating phumdis, which formed naturally over thousands of years without human intervention or dam construction.

72. (1) Krishna
The Nagarjunasagar project is one of India's most significant multi-purpose river valley developments. It features a massive masonry dam built across the Krishna river on the border of Telangana and Andhra Pradesh. The reservoir created by this dam supports extensive canal networks for irrigation and houses a major power plant. It was instrumental in the Green Revolution in southern India.

73. (3) A wide meander is cut off, creating a separate body of water
An ox-bow lake is a distinct fluvial landform found in the mature stages of a river. As a river meanders across a flat plain, the curves become more pronounced. Eventually, the river cuts through the narrow neck of a meander to take a straighter path. The abandoned loop is left behind as a standalone, U-shaped body of water.

74. (1) A-ii, B-iii, C-iv, D-i
Estuaries are common where rivers like the Narmada meet the sea in narrow inlets. Deltas, such as the Sunderbans, are formed by the Ganga and Brahmaputra at the coast. Ox-bow lakes are frequently found in the flat Burhi Gandak plains of Bihar. Gorges are deep mountain valleys, like the one formed by the Brahmaputra as it cuts through Namcha Barwa.

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75. (1) I, II, IV and V only
Ox-bow lakes are formed in the middle and lower courses of rivers where the terrain is flat. They represent old, abandoned channels created by high degrees of meandering. Kanwar Lake is a well-known example of such a feature. Over time, these lakes naturally undergo siltation and eutrophication. They are not characteristic of the youthful, high-velocity upper courses of mountain rivers.

76. (2) Flat with gentle gradients, causing extensive meandering
The presence of numerous ox-bow lakes in the middle and lower Ganga plains is a direct result of the local topography. The land in this region is remarkably flat with very gentle gradients. This lack of steepness causes the river to lose its velocity and flow in wide, sweeping meanders. These meanders are eventually cut off, creating the characteristic horseshoe-shaped lakes.

77. (3) Ken-Betwa Link
The river interlinking project aims to connect various Indian rivers to manage water resources better. The Ken-Betwa Link was the first major project to reach the implementation phase under this national scheme. It involves transferring surplus water from the Ken river in Madhya Pradesh to the water-scarce Betwa river basin, primarily benefiting the drought-prone Bundelkhand region across two states.

78. (3) Statement I is correct but Statement II is incorrect
The fundamental idea of river interlinking is to divert excess water from surplus basins to regions facing water scarcity. This ensures a more equitable distribution of water for irrigation and drinking. While many Himalayan rivers are considered perennial and surplus, it is incorrect to assume all Peninsular rivers are surplus; many are seasonal and suffer from significant water deficits.

originating over the Mediterranean Sea.
II. They travel eastwards across the Middle East and enter India during the winter season.
III. They bring essential winter rainfall to the states of Punjab, Haryana, and Rajasthan.
IV. The rainfall received from them is locally known as 'Mawath' in Rajasthan.
V. They are highly beneficial for the Kharif crops in northwestern India.
Which of the above statement(s) is/are correct?
(1) I, II, III and IV only
(2) II, III, IV and V only
(3) I, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

23. Which of the following statements regarding the winter season in India is incorrect?
(1) The days are typically warm and the nights are cold in northern India
(2) The northeast trade winds prevail over the country during this season
(3) The temperature decreases from south to north during this season
(4) Common frost in coastal peninsular regions
(5) Question not attempted

24. Which of the following identifies the months of the 'Hot weather season' in India according to standard meteorological divisions?
(1) March to May
(2) December to February
(3) June to September
(4) October to November
(5) Question not attempted

25. Consider the following statements concerning the phenomenon of 'Loo':
I. It is a strong, gusty, hot, and dry wind blowing during the day in the summer season.
II. It predominantly blows over the northern and northwestern parts of India.
III. Direct exposure to these winds is generally considered beneficial for human health.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

26. Violent localized storms accompanied by strong winds and torrential rains, often occurring in West Bengal and Assam during the hot weather season, are locally termed as:
(1) Kalbaishakhi
(2) Mango showers
(3) Loo
(4) Monsoon trough
(5) Question not attempted

27. Identify the correct pair representing the regions that receive heavy winter rainfall from the western disturbances.
(1) Tamil Nadu and Andhra Pradesh
(2) Kerala and Karnataka
(3) West Bengal and Odisha
(4) Punjab and Rajasthan
(5) Question not attempted

28. Match List I with List II and select the correct answer using the codes given below:
List I: (Season in India)
A. Cold weather season
B. Hot weather season
C. Southwest monsoon season
D. Retreating monsoon season
List II: (Prominent Feature)
i. Occurrence of dust storms in the northwest
ii. Clear skies and dropping night temperatures in the north
iii. Maximum annual rainfall across the country
iv. Tropical cyclones in the Bay of Bengal hitting the eastern coast
(1) A-ii, B-i, C-iii, D-iv
(2) A-i, B-ii, C-iv, D-iii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

29. Why does the eastern coast of India, particularly Tamil Nadu, remain relatively dry during the Southwest Monsoon season?
(1) It is located in the rain shadow area of the Eastern Ghats.
(2) High-pressure conditions prevail over the Coromandel coast during summer.
(3) It lies parallel to the Bay of Bengal branch of the southwest monsoon.
(4) The offshore winds drive moisture away from the coastal regions.
(5) Question not attempted

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30. Which region in India is globally renowned for receiving the highest average annual rainfall?
(1) Western slopes of the Western Ghats
(2) The Shiwalik range of the Himalayas
(3) The Andaman and Nicobar Islands
(4) Khasi Hills in Meghalaya
(5) Question not attempted

31. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).
Assertion (A): The amount of rainfall in northern plains of India decreases from east to west.
Reason (R): The Bay of Bengal branch of the monsoon gradually loses its moisture as it travels inland towards the northwest.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

32. Which of the following statements about the distribution of rainfall in India is incorrect?
(1) Specific parts of Meghalaya receiving over 400 cm of rainfall annually
(2) Deccan plateau rainfall exceeding 250 cm
(3) Western Rajasthan receives less than 20 cm of rainfall annually
(4) Rainfall is highly variable in regions of low precipitation like Gujarat
(5) Question not attempted

33. Which of the following best explains why Cherrapunji and Mawsynram receive exceptionally high rainfall?
(1) They are situated at very high altitudes exceeding 5000 meters above sea level
(2) Funnel-shaped topography forcing moist winds to rise
(3) They lie directly in the path of the tropical cyclones originating in the South China Sea area
(4) Dense equatorial forests in the region contribute immense moisture through transpiration cycles
(5) Question not attempted

34. Read the following list of states and arrange them in the decreasing order of the average annual rainfall they receive from the Southwest Monsoon.
A. Meghalaya
B. Uttar Pradesh
C. Punjab
D. Rajasthan
Select the correct sequence from the options below:
(1) A, B, C, D
(2) A, C, B, D
(3) B, A, D, C
(4) A, B, D, C
(5) Question not attempted

35. Ladakh is considered a cold desert. What is the primary climatic reason for the extreme aridity in the Ladakh region?
(1) It is located far away from the equator in the temperate climatic zone
(2) High solar radiation evaporates all available moisture in the upper soil
(3) Rain shadow location behind the Great Himalayas
(4) The soil in Ladakh is entirely composed of sand that cannot retain moisture
(5) Question not attempted

36. Which code is used in climatic classification to denote the 'Monsoon with short dry season' climate predominantly found in the western coast of India?
(1) Aw
(2) BShw
(3) Cwg
(4) Amw
(5) Question not attempted

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37. Consider the following statements regarding the climatic classification of Rajasthan:
I. BWhw represents the hot desert climate found in extreme western Rajasthan.
II. BShw denotes the semi-arid steppe climate found in areas like Nagaur and Jodhpur.
III. Cwg climate is observed in the eastern parts of Rajasthan.
IV. Aw climate characterizes the southernmost parts of Rajasthan including Banswara.
Which of the above statement(s) is/are correct?
(1) I and II only

(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

38. The periodic warming of sea surface temperatures across the central and east-central Equatorial Pacific Ocean, which significantly affects the Indian monsoon, is known as:
(1) La Niña
(2) El Niño
(3) Southern Oscillation
(4) Indian Ocean Dipole
(5) Question not attempted

39. Read the following statements and select the correct option regarding climate variability in India.
Statement I: El Niño years generally lead to deficient rainfall and drought-like conditions in India.
Statement II: La Niña typically enhances the intensity of the southwest monsoon, often leading to heavy rainfall and floods.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

40. Match List I with List II and select the correct answer using the codes given below:
List I: (Climatic Region Code)
A. As (Monsoon with dry summer)
B. Aw (Tropical savannah)
C. Cwg (Monsoon with dry winter)
D. E (Polar type)
List II: (Associated Indian State/Area)
i. Jammu and Kashmir (High altitudes)
ii. Coromandel Coast
iii. Peninsular plateau (most parts)
iv. Gangetic Plains
(1) A-ii, B-iii, C-iv, D-i
(2) A-iii, B-ii, C-i, D-iv
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

41. The variation in monsoon rainfall across years is often measured as a departure from the Long Period Average (LPA). In India, the LPA of rainfall for the southwest monsoon is approximately:
(1) 68 cm
(2) 108 cm
(3) 88 cm
(4) 128 cm
(5) Question not attempted

42. While analyzing the impact of ocean phenomena on the Indian monsoon, all of the following are known to influence the inter-annual variability of the Indian monsoon, except:
(1) Gulf Stream Current
(2) El Niño Southern Oscillation (ENSO)
(3) Indian Ocean Dipole (IOD)
(4) Madden-Julian Oscillation (MJO)
(5) Question not attempted

43. Consider the following statements regarding floods and droughts in India:
I. Areas with the lowest rainfall variability are most susceptible to frequent droughts.
II. The Brahmaputra valley is highly prone to annual floods during the monsoon.
III. Flash floods in Rajasthan and Gujarat are often caused by sudden intense cyclonic rainfall.
IV. A year is considered a 'drought year' if the overall rainfall deficiency exceeds 10% of the long-term average and a significant area is affected.
V. Drought can be categorized into meteorological, hydrological, and agricultural types.
Which of the above statement(s) is/are correct?
(1) I, II, III and IV only
(2) II, III, IV and V only
(3) I, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

44. During the winter season, a strong high-pressure center develops in the region north of the Himalayas. What is the effect of this pressure system on India?
(1) It pulls the southwest monsoon winds into the subcontinent territory
(2) Drives cold offshore winds towards the

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CHAPTER 10
Climate of India

1. Which of the following factors does not exert a direct primary influence on the climate of India?
(1) Latitudinal extent of the landmass
(2) North Atlantic ocean currents
(3) Altitude and various relief features
(4) Distance from the surrounding sea
(5) Question not attempted

2. Read the following statements regarding the role of the Himalayas in shaping India's climate.
Statement I: The Himalayas prevent the cold winds of Central Asia from entering the Indian subcontinent.
Statement II: The Himalayas force the moisture-laden Southwest monsoon winds to shed their rainfall in India.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

3. The variation in temperature between the coastal regions and the interior parts of India is primarily due to which phenomenon?
(1) High altitude of the interior peninsular plateau regions
(2) Presence of dense tropical forests in the interior states
(3) The continentality effect
(4) Influence of the Western disturbances from the Mediterranean
(5) Question not attempted

4. Consider the following statements regarding the factors controlling the Indian climate:
I. The Tropic of Cancer divides India into almost two equal climatic halves.
II. The Coriolis force deflects the southeast trade winds towards the right in the Northern Hemisphere.
III. The presence of the Tibetan Plateau has no significant role in the onset of the monsoon.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

5. Identify the odd one out among the following regarding local winds experienced during the hot weather season in India.
(1) Heat waves known as Loo
(2) Pre-monsoon Mango showers
(3) Western disturbances
(4) Stormy Nor'westers
(5) Question not attempted

6. Which of the following statements incorrectly describes the influence of the Arabian Sea and the Bay of Bengal on the Indian climate?
(1) Provision of moisture for the advancing southwest monsoon winds
(2) Generation of cold ocean currents that lower summer temperatures
(3) Moderating effect on the temperature of coastal areas throughout the year
(4) Source of tropical cyclones affecting the eastern and western coasts
(5) Question not attempted

7. Match List I with List II and select the correct answer using the codes given below:
List I: (Local Storms)
A. Mango Showers
B. Bardoli Chheerha
C. Kalbaishakhi
D. Loo
List II: (Region/State)
i. Coastal Karnataka and Kerala
ii. Assam

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(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

53. Read the following statements about the climate of India and select the correct option.
Statement I: India possesses a tropical monsoon type of climate across its entire geographical extent uniformly.
Statement II: The presence of the Himalayas prevents the extreme cold winds of northern Asia from affecting the Indian subcontinent.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

54. Which of the following is correct regarding the phenomenon of 'October Heat'?
(1) It refers to the intense cold waves entering northwest India during the month of October
(2) Transition period featuring high temperatures and humidity
(3) It denotes the peak summer condition in Tamil Nadu during the specific month of October
(4) It is characterized by heavy torrential rains and cloudbursts in the Himalayan states
(5) Question not attempted

55. Select the correct chronological sequence of seasons in India as per meteorological divisions:
(1) Hot weather season, Cold weather season, Southwest monsoon, Retreating monsoon
(2) Cold weather season, Hot weather season, Southwest monsoon, Retreating monsoon
(3) Southwest monsoon, Hot weather season, Retreating monsoon, Cold weather season
(4) Hot weather season, Southwest monsoon, Cold weather season, Retreating monsoon
(5) Question not attempted

56. The frequency and intensity of tropical cyclones on the eastern coast of India are highest during which of the following periods?
(1) October to November
(2) March to May
(3) June to August
(4) December to February
(5) Question not attempted

57. Which specific atmospheric feature steers the Western Disturbances into the Indian subcontinent during the winter season?
(1) Subtropical Easterly Jet Stream system
(2) Seasonal Somali ocean current
(3) Westerly Jet Stream
(4) Equatorial Counter Current system
(5) Question not attempted

58. Consider the following statements regarding the Indian Ocean Dipole (IOD):
I. It involves an irregular oscillation of sea surface temperatures in the western and eastern Indian Ocean.
II. A positive IOD is generally beneficial for the Indian monsoon.
III. A negative IOD brings heavier than normal rainfall to the Indian subcontinent.
IV. The IOD can sometimes offset the negative impacts of El Niño on the Indian monsoon.
Which of the above statement(s) is/are correct?
(1) I, II and IV only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

59. What is the main cause for the shifting of the Inter-Tropical Convergence Zone (ITCZ) northwards over the Ganga plains in summer?
(1) The rapid cooling of the Indian Ocean waters
(2) The melting of glaciers in the high Himalayas
(3) The establishment of high pressure over the Tibetan Plateau
(4) Northward movement of the sun towards the Cancer tropic
(5) Question not attempted

60. During El Niño years, the coastal upwelling along the coast of Peru weakens. How does this

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19. (1) A-ii, B-iii, C-iv, D-i
A 'Break in Monsoon' refers to dry spells during the rainy season. 'October Heat' describes the oppressive heat and humidity during the monsoon retreat. 'Western Disturbances' bring winter rainfall to Northwest India, originating from the Mediterranean. The 'Northeast Monsoon' involves winds blowing from land to sea, picking up moisture from the Bay of Bengal to water Tamil Nadu.

20. (4) The Himalayas
The Bay of Bengal branch of the southwest monsoon moves northward and strikes the mountains of northeastern India. The massive Himalayan range acts as a wall, preventing the winds from moving further north. Consequently, the winds are deflected towards the west, moving across the Gangetic plains and providing rainfall to northern and northwestern parts of the Indian subcontinent.

21. (1) Both Statement I and Statement II are correct
The Northeast monsoon winds originate over the Asian landmass, making them naturally dry and continental. As they blow toward the sea, they cross the Bay of Bengal, where they pick up significant moisture. These moisture-laden winds then hit the eastern coast of India, particularly the Coromandel Coast in Tamil Nadu, resulting in essential winter rainfall for the region.

22. (1) I, II, III and IV only
Western Disturbances are Mediterranean cyclonic storms that enter India via the Middle East during winter. They bring crucial rainfall, locally called 'Mawath' in Rajasthan, to the northwestern plains. While highly beneficial for winter-grown Rabi crops like wheat, they are not associated with Kharif crops, which are grown during the summer monsoon season. Thus, statement five is incorrect.

23. (4) Common frost in coastal peninsular regions
During the Indian winter, northern regions experience warm days and cold nights with frost being common in the Himalayas. Northeast trade winds prevail, blowing from land to sea. However, coastal peninsular regions have a moderate maritime climate where temperatures rarely drop enough for frost to occur. The lack of extreme cold is due to the moderating influence of the surrounding oceans.

24. (1) March to May
In India, the hot weather season, or summer, occurs from March to May. During this period, the global heat belt shifts northward due to the apparent movement of the sun. This leads to rising temperatures across the country, reaching their peak in the northern plains. This season precedes the arrival of the southwest monsoon in early June.

25. (1) I and II only
Loo is a fierce, hot, and dry summer wind characteristic of northern and northwestern India. It blows during the day and can cause temperatures to soar. While it is a defining feature of the regional climate, direct exposure is extremely hazardous to human health, often leading to heatstroke. Therefore, the statement claiming it is beneficial is factually wrong.

26. (1) Kalbaishakhi
Kalbaishakhi refers to violent local thunderstorms that occur in West Bengal and parts of Assam during the hot weather season. These storms are characterized by strong winds and torrential rain, often accompanied by hail. While they can be destructive, they provide relief from intense heat and are beneficial for the cultivation of certain crops like tea and rice.

27. (4) Punjab and Rajasthan
Punjab and Rajasthan receive significant winter rainfall from Western Disturbances. These shallow cyclonic depressions originate in the Mediterranean Sea and travel eastward. The resulting precipitation, though low in quantity, is extremely valuable for the growth of Rabi crops, particularly wheat. This rainfall helps maintain soil moisture during the otherwise dry winter months in the northwestern plains.

28. (1) A-ii, B-i, C-iii, D-iv
The cold weather season features clear skies and dropping night temperatures. The hot weather season is marked by dust storms in the northwest. The southwest monsoon provides the bulk of India's annual rainfall. The retreating monsoon season is associated with tropical cyclones in the

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III. The Indian Ocean dipole is the sole determiner of drought occurrences in the Indian subcontinent.

Which of the above statement(s) is/are incorrect?

(1) I only
(2) III only
(3) II and III only
(4) I and II only
(5) Question not attempted

68. Read the following statements about extreme rainfall regions in India and select the correct option.

Statement I: Mawsynram is currently recognized as the wettest place on Earth, receiving exceptionally high annual rainfall.

Statement II: Mawsynram is located on the leeward side of the Garo, Khasi, and Jaintia hills.

(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

69. The tropical cyclones that hit the eastern coast of India during the retreating monsoon originate primarily in which associated water body?

(1) Arabian Sea
(2) Gulf of Mannar
(3) Andaman Sea
(4) Gulf of Khambhat
(5) Question not attempted

70. Match List I with List II and select the correct answer using the codes given below:

List I: (City)

A. Jodhpur
B. Thiruvananthapuram
C. Delhi
D. Leh

List II: (Prominent Climatic Characteristic)

i. Cold desert climate
ii. Arid / Semi-arid climate
iii. Extreme continental climate
iv. Equable maritime climate

(1) A-ii, B-iv, C-iii, D-i
(2) A-i, B-iii, C-iv, D-ii
(3) A-ii, B-i, C-iii, D-iv
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

71. Identify the odd one out among the following regarding the characteristics of the Cold Weather Season in India.

(1) Weak high-pressure region develops over the northern plains territory
(2) Winds blow from the landmass towards the surrounding sea
(3) Pleasant weather with clear skies in the northern plains region
(4) Heavy rainfall across the central Indian plateau
(5) Question not attempted

72. During the hot weather season, the temperature in the peninsular plateau of India remains relatively lower compared to the northern plains. What is the primary cause for this phenomenon?

(1) The moderating influence of the surrounding oceans
(2) The dense equatorial forests covering the peninsula
(3) The sudden onset of winter rains in the south
(4) The lack of solar radiation south of the Tropic of Cancer
(5) Question not attempted

73. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R).

Assertion (A): Dust storms are very common in Punjab, Haryana, and Rajasthan during the month of May.

Reason (R): Intense heating of the landmass creates strong low-pressure centers leading to rapid uplifting of air and associated localized storms.

In the context of the above two statements, which one of the following is correct?

(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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ANSWERS

1. (2) North Atlantic ocean currents
India's climate is influenced by latitude, altitude, relief, and distance from the sea. The North Atlantic currents are too distant to affect the subcontinent directly. Primary drivers include the Himalayas, pressure systems, and the Indian Ocean. These factors collectively determine the unique monsoonal patterns and temperature variations across the Indian landmass.

2. (1) Both Statement I and Statement II are correct
The Himalayan range acts as a critical climatic barrier for India. It effectively blocks frigid, bone-dry winds from Central Asia during winter, maintaining warmer temperatures in the subcontinent. Additionally, the mountains force moisture-laden southwest monsoon winds to rise and precipitate, ensuring vital rainfall across northern India and preventing the moisture from escaping northward.

3. (3) The continentality effect
Temperature variations between coastal and interior regions arise from continentality. Large water bodies exert a moderating influence on coastal areas, resulting in equable temperatures year-round. Conversely, interior regions, far from the sea's influence, experience extreme climatic conditions with very hot summers and cold winters. This phenomenon is driven by the differential heating of land and water.

4. (1) I and II only
The Tropic of Cancer divides India into tropical and subtropical zones, influencing regional temperature patterns. The Coriolis force deflects winds, turning southeast trade winds into the southwest monsoon in the Northern Hemisphere. However, the Tibetan Plateau is crucial for monsoon onset due to intense heating. Therefore, the statement regarding its lack of significance is geographically incorrect.

5. (3) Western disturbances
Loo, Mango showers, and Nor'westers are all phenomena occurring during the hot weather season in India. Loo is a hot wind, while others bring pre-monsoon rain. Western disturbances, however, are shallow cyclonic depressions originating in the Mediterranean. They primarily affect India during the winter months, bringing rainfall to the northwest, thus making them the seasonal exception.

6. (2) Generation of cold ocean currents that lower summer temperatures
The Arabian Sea and Bay of Bengal provide essential moisture for the southwest monsoon and moderate coastal temperatures through sea breezes. They also serve as breeding grounds for tropical cyclones. However, they do not generate cold ocean currents that lower summer temperatures; instead, the warm tropical waters are vital for maintaining the heat balance and monsoon intensity.

7. (1) A-i, B-ii, C-iii, D-iv
Local storms in India vary by region. Mango showers occur in Kerala and Karnataka, aiding fruit ripening. Bardoli Chheerha is the local name for pre-monsoon storms in Assam. Kalbaishakhi refers to violent thunderstorms in West Bengal during the hot season. Loo is a hot, dry wind typical of the northwestern plains, including Rajasthan and Punjab.

8. (1) Season
The word monsoon originates from the Arabic term 'mausim', which literally translates to 'season'. Historically, it was used by sailors to describe a system of seasonal winds in the Arabian Sea. These winds reverse their direction twice a year, blowing from the sea during summer and from the land toward the sea during winter.

9. (3) The differential heating and cooling of land and water
The primary driver for the Southwest Monsoon is the differential heating and cooling of land and water. During summer, the massive Asian landmass heats up faster than the Indian Ocean, creating intense low pressure. This pressure gradient draws moisture-laden winds from the high-pressure area over the southern ocean

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IV. The retreating monsoon frequently causes cyclonic disasters along the eastern coastline.
V. The Western Ghats act as a primary safeguard preventing droughts in the entire Deccan plateau.

Which of the above statement(s) is/are correct?
(1) I, II and IV only
(2) I, III and IV only
(3) II, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

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specific oceanic change conceptually link to a deficient monsoon in India?
(1) It causes a breakdown of the Himalayas' orographic barrier system
(2) Walker Circulation alterations suppressing rain-bearing winds
(3) It leads to the strengthening of the high-pressure system over the Tibetan plateau
(4) It generates strong easterly jet streams that blow away the monsoon clouds from India
(5) Question not attempted

61. Match List I with List II and select the correct answer using the codes given below:
List I: (Climatic Factor)
A. Latitude
B. Altitude
C. Distance from the Sea
D. Ocean Currents
List II: (Impact on Indian Climate)
i. Moderate temperature along the coastal regions
ii. Decreasing temperature in hill stations like Shimla
iii. Southern half of India experiences tropical climate without severe winters
iv. Amplification or dampening of monsoon winds via sea surface temperature
(1) A-iii, B-ii, C-i, D-iv
(2) A-ii, B-i, C-iii, D-iv
(3) A-iii, B-i, C-ii, D-iv
(4) A-i, B-ii, C-iv, D-iii
(5) Question not attempted

62. Which of the following locations is incorrectly paired with the primary reason for its low rainfall?
(1) Leh - Rain shadow effect and extreme high altitude
(2) Jaisalmer - Parallel alignment of Aravalis to the monsoon
(3) Coromandel Coast (in Summer) - Parallel to Bay of Bengal
(4) Pune - Located on the windward side
(5) Question not attempted

63. The term 'Monsoon' was first historically utilized by seafarers navigating which oceanic body?
(1) Arabian Sea
(2) Atlantic Ocean
(3) Pacific Ocean
(4) South China Sea
(5) Question not attempted

64. Consider the following statements about the climate and rainfall of Rajasthan:
I. The Aravali Range splits the state into two distinct climatic zones.
II. Mount Abu receives the highest rainfall in the state.
III. The state entirely falls under the 'Amw' category of classification.
IV. Most of the rainfall is received from the Arabian Sea branch of the southwest monsoon.
V. The phenomenon of 'Mawath' occurs in winter and is crucial for the Rabi crop.
Which of the above statement(s) is/are correct?
(1) I, II, IV and V only
(2) II, III and V only
(3) I, II and V only
(4) I, IV and V only
(5) Question not attempted

65. All of the following states typically receive rainfall from the retreating monsoon (Northeast monsoon) during the months of October to December, except:
(1) Tamil Nadu
(2) Punjab
(3) Coastal Andhra Pradesh
(4) Parts of Karnataka and Kerala
(5) Question not attempted

66. During the southwest monsoon season, periods of consecutive days without rainfall are meteorologically termed as:
(1) Break in the monsoon
(2) Sudden monsoon burst
(3) Seasonal monsoon retreat
(4) Low-pressure monsoon trough
(5) Question not attempted

67. Consider the following statements regarding the influence of the Indian Ocean on the Indian climate:
I. It acts as a massive reservoir of moisture for the southwest monsoon winds.
II. The temperature gradient between the Indian Ocean and the Asian landmass is a major driving force for the monsoon.

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toward the subcontinent, resulting in the seasonal monsoon rainfall.

10. (1) Both A and R are true and R is the correct explanation of A.
The western coastal plains receive heavy rainfall due to orographic lifting. As moisture-saturated winds from the Arabian Sea strike the Western Ghats, they are forced to rise. This ascent causes cooling and condensation, leading to heavy precipitation on the windward side. Consequently, the interior Deccan Plateau remains in the rain shadow area, receiving significantly less seasonal rainfall.

11. (4) Low-pressure area over northern plains in summer
The monsoon trough is an elongated low-pressure zone that develops over the northern plains of India during the summer. Its position significantly influences the distribution of monsoon rainfall. When the trough lies over the plains, rainfall is widespread there. A shift in its position towards the Himalayan foothills can lead to heavy rains in mountains and dry spells.

12. (2) The monsoon typically sets over the Kerala coast by the first week of June.
The southwest monsoon generally arrives at the southern tip of the Indian peninsula by the first week of June. This arrival, known as the onset, marks the beginning of the rainy season. While branches move through the Arabian Sea and Bay of Bengal, the Kerala coast is the traditional mainland entry point for these rain-bearing seasonal winds.

13. (1) Andaman & Nicobar Islands, Kerala Coast, Mumbai, Delhi
The monsoon follows a predictable northward progression. It first reaches the Andaman and Nicobar Islands in late May. By the first week of June, it hits the Kerala coast. It then advances to Mumbai by mid-June and eventually reaches Delhi by the end of June or early July. This sequence reflects the movement of the moisture-laden winds.

14. (4) Arabian Sea Branch - Rain on Coromandel Coast
The Arabian Sea branch brings heavy rain to the Western Ghats and western coast. However, it does not provide significant rainfall to the Coromandel Coast. The Coromandel Coast remains relatively dry during the southwest monsoon because it lies parallel to the Bay of Bengal branch and in the rain shadow area of the Western Ghats for the other.

15. (1) Increased rainfall from the Arabian Sea monsoon branch
The Aravalli Range currently stands parallel to the path of the Arabian Sea monsoon winds, allowing them to pass without being forced to rise. If the mountains had an east-west alignment, they would act as an orographic barrier. This would force the moisture-laden winds to ascend, causing significant precipitation and potentially transforming the arid climate of western Rajasthan.

16. (1) I, II and III only
The retreat of the monsoon starts in northwestern India in early September. It is characterized by clearing skies and a temporary rise in temperature, creating oppressive conditions known as October Heat. During this phase, the low-pressure trough shifts from the northern plains towards the Bay of Bengal, not the other way around, making the fourth statement incorrect.

17. (2) Saurashtra region
The Bay of Bengal branch travels over the ocean, gathering moisture before hitting the Purvanchal hills and Meghalaya. It is then deflected westward along the Himalayas, providing rain to the Gangetic plains and Brahmaputra valley. The Saurashtra region in Gujarat, however, primarily receives its limited rainfall from the Arabian Sea branch, not from the distant Bay of Bengal branch.

18. (1) Burst of the Monsoon
The sudden arrival of the monsoon in early June is called the 'Burst of the Monsoon'. It is marked by a violent transition from dry heat to intense, continuous rainfall accompanied by thunder and lightning. This phenomenon occurs when moisture-laden winds from the Indian Ocean overcome the prevailing dry air, bringing a rapid and dramatic change to the regional weather.

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74. Which of the following statements is true regarding the impact of La Niña on the Indian climate?
(1) Stronger southwest monsoon frequently causing floods
(2) It leads to abnormal warming of sea surface temperatures in the equatorial Pacific region
(3) It generally causes a weaker than normal advancing southwest monsoon
(4) It entirely prevents the occurrence of tropical cyclones in the Bay of Bengal area
(5) Question not attempted

75. According to meteorological studies, what percentage of India's total annual rainfall is roughly contributed by the Southwest Monsoon season?
(1) 40 - 50%
(2) 55 - 65%
(3) 90 - 95%
(4) 70 - 80%
(5) Question not attempted

76. Read the following stages of the monsoon mechanism and arrange them in the correct sequential order of occurrence over the Indian subcontinent.
A. Burst of the Monsoon
B. Development of extreme low pressure over northwest India
C. Retreat of the Monsoon
D. Arrival of pre-monsoon showers
Select the correct sequence from the options below:
(1) B, D, A, C
(2) D, B, A, C
(3) B, A, D, C
(4) D, A, B, C
(5) Question not attempted

77. Consider the following statements regarding the climatic regions of India:
I. Climatic classification of India is often based on monthly values of temperature and precipitation.
II. The Cwg type climate covers the major parts of the northern plains.
III. The Amw type climate is found along the Malabar coast.
IV. The E type climate is located in extreme southern states like Kerala and Tamil Nadu.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

78. If a strong El Niño event is recorded, which of the following scenarios is most likely to play out for the Indian agricultural sector?
(1) A bumper Kharif crop due to excess atmospheric rainfall
(2) Severe frost damage to various crops in peninsular India
(3) Shifting of major crop zones from the Gangetic plains to the Thar desert
(4) Drought impacting sowing and crop yield
(5) Question not attempted

79. Match List I with List II and select the correct answer using the codes given below:
List I: (Type of Rainfall)
A. Orographic Rainfall
B. Cyclonic Rainfall
C. Convectional Rainfall
D. Frontal Rainfall (Western Disturbances)
List II: (Primary Origin/Mechanism)
i. Intense local heating during summer days
ii. Moisture-laden winds striking a mountain barrier
iii. Extratropical depressions from the Mediterranean
iv. Low-pressure systems moving inland from the Bay of Bengal
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iv, D-iii
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

80. Consider the following statements regarding the variability of climate and natural hazards in India:
I. Floods are an annual feature in the Brahmaputra and Ganga basins due to heavy monsoon rains.
II. Droughts occur exclusively in the western part of India.
III. Climate change is observed to be increasing the frequency of extreme weather events in India.

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Bay of Bengal that frequently impact the eastern coast, causing significant weather changes.

29. (3) It lies parallel to the Bay of Bengal branch of the southwest monsoon.
During the southwest monsoon, the Coromandel Coast of Tamil Nadu remains relatively dry. This occurs because the coast lies parallel to the direction of the Bay of Bengal branch winds, preventing orographic lifting. Additionally, the region is situated in the rain shadow area of the Western Ghats, which blocks the moisture from the Arabian Sea branch from reaching the east.

30. (4) Khasi Hills in Meghalaya
Mawsynram, located in the Khasi Hills of Meghalaya, is recognized as the wettest place on Earth. It receives the highest average annual rainfall globally due to its unique geographic position. Moisture-laden winds from the Bay of Bengal are trapped by the funnel-shaped hills, forcing them to rise rapidly and release immense amounts of precipitation over the region.

31. (1) Both A and R are true and R is the correct explanation of A.
In the northern plains of India, rainfall decreases from east to west. The Bay of Bengal branch of the monsoon enters through the northeast and travels westward along the Himalayas. As it moves further inland, the moisture content in the air gradually depletes. Consequently, eastern states receive much higher rainfall compared to the drier western states like Rajasthan and Punjab.

32. (2) Deccan plateau rainfall exceeding 250 cm
Rainfall in India is highly varied. Parts of Meghalaya exceed 400 cm, while western Rajasthan receives less than 20 cm. However, the Deccan Plateau is largely situated in the rain shadow area of the Western Ghats. Therefore, it typically receives moderate to low rainfall, generally ranging between 50 cm and 100 cm, making the 250 cm figure incorrect.

33. (2) Funnel-shaped topography forcing moist winds to rise
Cherrapunji and Mawsynram experience extreme rainfall due to the unique funnel-shaped topography of the Khasi Hills. When moisture-laden winds from the Bay of Bengal enter the valley, they are funneled into a narrow area and forced to rise abruptly. This rapid orographic ascent causes cooling and intense condensation, leading to the world's highest recorded annual precipitation levels.

34. (1) A, B, C, D
Meghalaya receives the highest rainfall due to its hilly terrain and proximity to the Bay of Bengal. Moving west along the northern plains, rainfall decreases. Uttar Pradesh receives moderate amounts, followed by Punjab. Rajasthan, located at the western end of the monsoon's path and lacking significant barriers, receives the least amount of average annual rainfall among these states.

35. (3) Rain shadow location behind the Great Himalayas
Ladakh is a high-altitude cold desert characterized by extreme aridity. Its lack of moisture is primarily due to its geographic position in the rain shadow of the Great Himalayas. The massive mountain range blocks the moisture-laden monsoon winds from reaching the region. As a result, Ladakh receives very little precipitation, mostly occurring in the form of scant winter snowfall.

36. (4) Amw
In Koeppen's climatic classification, the code 'Amw' represents a Tropical Monsoon climate with a short dry season. This climatic type is predominantly found along the western coast of India, including the Malabar coast. It is characterized by high temperatures throughout the year and heavy seasonal rainfall, with only a brief period of dry weather during the winter months.

37. (4) I, II, III and IV
Rajasthan's climate is diverse. BWhw represents the arid hot desert in the west. BShw signifies the semi-arid steppe climate in central districts. Cwg denotes the monsoon type with dry winters found in the eastern parts. Aw characterizes the tropical savannah climate in the humid southernmost region. These codes accurately reflect the varying temperature and precipitation patterns across the entire state.

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38. (2) El Niño
El Niño refers to the periodic warming of sea surface temperatures in the central and east-central Equatorial Pacific. This phenomenon disrupts global weather patterns. In the context of India, El Niño is closely linked to a weakening of the monsoon winds. This often results in deficient seasonal rainfall, leading to drought conditions and negatively impacting the country's agricultural productivity.

39. (1) Both Statement I and Statement II are correct
El Niño and La Niña are opposite phases of a climate cycle. El Niño years are historically associated with suppressed monsoon rainfall in India, often causing droughts. Conversely, La Niña involves the cooling of Pacific waters, which typically strengthens the Indian monsoon. This leads to above-average rainfall, which can benefit agriculture but also increases the risk of widespread flooding.

40. (1) A-ii, B-iii, C-iv, D-i
The 'As' code represents a monsoon climate with dry summers, typical of the Coromandel Coast. 'Aw' denotes tropical savannah, covering much of the peninsular plateau. 'Cwg' signifies a monsoon climate with dry winters, characteristic of the Gangetic Plains. 'E' represents a polar type climate, found in the high-altitude, cold regions of Jammu, Kashmir, and other Himalayan territories.

41. (3) 88 cm
The Long Period Average (LPA) is the benchmark used by the India Meteorological Department to measure monsoon performance. For the southwest monsoon, which occurs from June to September, the LPA is approximately 88 cm. Rainfall is classified as normal, deficient, or excess based on its percentage deviation from this long-term average calculated over several decades.

42. (1) Gulf Stream Current
The Indian monsoon is a complex system influenced by various oceanic and atmospheric phenomena. ENSO, IOD, and the Madden-Julian Oscillation all play significant roles in determining seasonal rainfall variability. However, the Gulf Stream is a warm Atlantic Ocean current. Due to its geographical location and flow pattern, it has no direct or significant impact on the Indian monsoon.

43. (2) II, III, IV and V only
Floods are frequent in the Brahmaputra valley, and flash floods occur in western India. Droughts are classified into various types and are officially declared based on rainfall deficiency. However, areas with high rainfall variability, not low variability, are more prone to frequent droughts. Regions with low variability usually have more reliable rainfall patterns, making the first statement incorrect.

44. (2) Drives cold offshore winds towards the subcontinent
During winter, a strong high-pressure system forms over Central Asia, north of the Himalayas. This system drives cold, dry air southward. These winds move towards the Indian subcontinent as offshore winds. The Himalayas act as a barrier, preventing the most extreme cold from entering, but the resulting dry, cool air defines the winter weather across the northern plains.

45. (3) Northeast Monsoon - Coastal Tamil Nadu
The retreating monsoon, or Northeast monsoon, is the primary source of rainfall for coastal Tamil Nadu and parts of Andhra Pradesh from October to December. As the winds retreat from the land, they cross the Bay of Bengal, pick up moisture, and hit the southeastern coast. Other pairs, like Western Disturbances or the Arabian Sea branch, do not characterize this season's impact.

46. (3) III only
Rajasthan's climate is arid in the west and more humid in the east. The Aravalli Range acts as a climatic divide. While most rain comes from the monsoon, winter rainfall is not non-existent. The state receives 'Mawath' from Western Disturbances during winter, which is vital for crops. Therefore, the statement claiming winter rainfall is completely non-existent is geographically and meteorologically false.

47. (1) Tropic of Cancer
The Tropic of Cancer (23.5° N) passes roughly through the middle of India. This latitude serves as a significant climatic boundary. The region south of this line falls within the tropical zone, characterized by high temperatures and less

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seasonal variation. The region north of the line is in the subtropical zone, experiencing more distinct seasonal temperature changes and colder winters.

48. (2) Inter-Tropical Convergence Zone
ITCZ stands for the Inter-Tropical Convergence Zone. It is a low-pressure belt near the equator where the trade winds from the Northern and Southern Hemispheres converge. During the Indian summer, the ITCZ shifts northward over the Ganga plains. This shift is a crucial factor in the onset and intensity of the southwest monsoon, as it draws moisture-laden winds inland.

49. (1) A-i, B-ii, C-iii, D-iv
Rainfall distribution in India is highly uneven. Extreme western Rajasthan is arid, receiving less than 20 cm. The interior Deccan Plateau receives moderate rain between 50 cm and 100 cm. The eastern Gangetic plains are more humid, with 100 cm to 200 cm. The western coastal plains receive the most, often exceeding 250 cm due to heavy orographic precipitation.

50. (1) Withdrawal of southwest monsoon from northern plains
The 'Retreating Monsoon' refers to the period during October and November when the southwest monsoon winds withdraw from the northern plains. As the sun moves southward, the low-pressure trough over the plains weakens and is replaced by high pressure. This results in the winds reversing direction, moving from the land towards the sea, marking the end of the rainy season.

51. (3) Punjab
Mango showers are pre-monsoon rains that occur towards the end of the hot weather season, primarily in Kerala, Karnataka, and parts of Goa. They are so named because they help in the early ripening of mangoes. Punjab, located in the far northwest, does not experience these specific maritime-influenced pre-monsoon showers; its weather is driven by different continental factors.

52. (1) Both A and R are true and R is the correct explanation of A.
Indian monsoon rainfall is known for its high variability and unpredictability. This spatial and temporal unevenness is caused by the erratic movement of the monsoon trough and the frequency of tropical depressions. These systems dictate where and when heavy rain falls. Consequently, while some regions may experience floods, others might suffer from drought within the same monsoon season.

53. (4) Statement I is incorrect but Statement II is correct
While India is often described as having a monsoon climate, it is not uniform across its entire extent; regional variations range from arid deserts to alpine conditions. However, the second statement is correct: the Himalayas form a massive physical barrier that shields the subcontinent from the frigid, dry polar air masses of northern Asia, significantly moderating India's winter temperatures.

54. (2) Transition period featuring high temperatures and humidity
'October Heat' refers to the oppressive weather conditions experienced during the retreat of the monsoon. As the rains stop, skies clear and temperatures rise. However, the ground remains moist, leading to high humidity. This combination of high heat and high humidity creates very uncomfortable and sticky conditions for the population, typically occurring during the transition from the rainy to winter season.

55. (2) Cold weather season, Hot weather season, Southwest monsoon, Retreating monsoon
The Indian meteorological calendar follows a specific four-season cycle. It begins with the Cold weather season (December to February), followed by the Hot weather season (March to May). The Southwest monsoon season (June to September) brings the primary rains. The cycle concludes with the Retreating monsoon season (October and November), during which the rain-bearing winds withdraw from the subcontinent.

56. (1) October to November
The frequency and intensity of tropical cyclones in the Bay of Bengal are highest during the retreating monsoon period, specifically October and November. During this time, the low-pressure center shifts from the land to the sea. These cyclones often strike the eastern coast, particularly Odisha, Andhra Pradesh, and

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is estimated that approximately 70% to 80% of India's annual rainfall occurs during the four months from June to September. This seasonal rainfall is vital for the nation's agriculture, water resources, and overall economic stability.

76. (1) B, D, A, C
The monsoon cycle begins with the development of extreme low pressure over the northwest during summer. This is followed by pre-monsoon showers in late May. Then, the 'Burst of the Monsoon' occurs in early June as the main rainy season starts. Finally, the cycle concludes with the retreat of the monsoon starting from the northwest in early September.

77. (1) I, II and III only
India's climatic classification utilizes monthly temperature and precipitation data. The Cwg type covers the vast northern plains, while the Amw type is characteristic of the Malabar coast. However, the E type (polar climate) is found in high-altitude Himalayan regions like Jammu and Kashmir, not in southern states like Kerala. Thus, the fourth statement is geographically incorrect.

78. (4) Drought impacting sowing and crop yield
A strong El Niño event is often detrimental to Indian agriculture. Because El Niño typically weakens the southwest monsoon winds, it leads to deficient and poorly distributed rainfall. This causes widespread drought conditions, which delay the sowing of Kharif crops and significantly reduce overall agricultural yields. Such events pose a major threat to food security and the rural economy in India.

79. (1) A-ii, B-iv, C-i, D-iii
Orographic rainfall occurs when moisture-laden winds strike mountain barriers like the Western Ghats. Cyclonic rainfall is associated with low-pressure systems from the Bay of Bengal. Convectional rainfall results from intense local heating during summer afternoons. Frontal rainfall, specifically relating to Western Disturbances in India, is caused by extratropical depressions originating over the Mediterranean Sea and moving eastward.

80. (2) I, III and IV only
Floods are common in the Brahmaputra and Ganga basins, and climate change is increasing extreme weather frequency. The retreating monsoon causes coastal cyclonic disasters. However, droughts are not exclusive to the west, as many interior regions suffer. Furthermore, the Western Ghats cause rain shadows, actually contributing to drought susceptibility in the Deccan plateau. Statements II and V are thus incorrect.

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season. During these periods, which can last for several days or weeks, rainfall ceases or becomes very sparse over large parts of the country. This happens when the monsoon trough shifts its position or when there is a lack of tropical depressions to provide moisture.

67. (2) III only
The Indian Ocean provides moisture for the monsoon, and the land-sea temperature gradient is a key driver. However, the Indian Ocean Dipole is not the sole determiner of droughts, as other factors like El Niño and internal atmospheric dynamics also play critical roles. Therefore, statement III is incorrect, while statements I and II accurately reflect the ocean's influence.

68. (3) Statement I is correct but Statement II is incorrect
Mawsynram is indeed the wettest place on Earth, receiving record-breaking annual rainfall. However, its high precipitation is because it is located on the windward side of the Khasi Hills, not the leeward side. On the windward side, moisture-laden winds are forced to rise and condense, whereas the leeward side is the rain shadow area that receives significantly less rainfall.

69. (3) Andaman Sea
The tropical cyclones that strike the eastern coast of India during the retreating monsoon season (October-November) primarily originate in the Andaman Sea and the adjacent Bay of Bengal. These low-pressure systems move westwards or north-westwards, intensifying over the warm waters before making landfall. They are a major source of late-season rainfall and occasional coastal destruction in eastern India.

70. (1) A-ii, B-iv, C-iii, D-i
Jodhpur features an arid or semi-arid climate typical of the Thar desert region. Thiruvananthapuram has an equable maritime climate due to its coastal location. Delhi experiences an extreme continental climate with very hot summers and cold winters. Leh, situated in the high-altitude rain shadow of the Himalayas, possesses a cold desert climate with very low annual precipitation.

71. (4) Heavy rainfall across the central Indian plateau
The cold weather season in India is generally characterized by high pressure over the northern plains, offshore winds blowing from land to sea, and pleasant weather with clear skies. While some regions like the northwest receive rain from Western Disturbances and the southeast from the Northeast monsoon, heavy rainfall is not a general characteristic across the central Indian plateau during winter.

72. (1) The moderating influence of the surrounding oceans
During the hot weather season, the northern plains of India experience extreme heat because of their continental location. In contrast, the peninsular plateau remains relatively cooler. This is due to its proximity to the Arabian Sea and the Bay of Bengal. These large water bodies exert a moderating maritime influence, preventing temperatures from reaching the extremes seen in the landlocked north.

73. (1) Both A and R are true and R is the correct explanation of A.
In May, intense solar heating causes the northern plains to become extremely hot, creating localized low-pressure systems. These conditions lead to the formation of strong convection currents and rapid air uplift, resulting in frequent dust storms across Punjab, Haryana, and Rajasthan. These storms, while often destructive, sometimes bring temporary relief by lowering temperatures through light rain or cloud cover.

74. (1) Stronger southwest monsoon frequently causing floods
La Niña is characterized by the cooling of sea surface temperatures in the equatorial Pacific Ocean. This phenomenon typically enhances the pressure gradient that drives the Indian monsoon. As a result, La Niña years often see a stronger-than-normal southwest monsoon, leading to higher rainfall across the subcontinent. While beneficial for agriculture, it also increases the frequency and severity of floods.

75. (4) 70 - 80%
The Southwest Monsoon is the most significant climatic event in India, providing the vast majority of the country's total annual precipitation. It

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West Bengal, causing significant rainfall and occasional large-scale storm-related damage.

57. (3) Westerly Jet Stream
The Western Disturbances are brought into the Indian subcontinent by the Westerly Jet Stream. This high-altitude wind system flows from west to east across the subtropical regions. During winter, the jet stream shifts southward, positioning itself over the northern part of India. It acts as a conduit, steering Mediterranean cyclonic storms toward the northwestern plains of the country.

58. (1) I, II and IV only
The Indian Ocean Dipole involves temperature oscillations between the western and eastern Indian Ocean. A positive IOD usually enhances the monsoon, while a negative IOD can weaken it. Importantly, a positive IOD can sometimes mitigate the rainfall deficit caused by El Niño. Therefore, the statement that a negative IOD brings heavier than normal rainfall to India is generally incorrect.

59. (4) Northward movement of the sun towards the Cancer tropic
The ITCZ shifts northward over the Ganga plains during the summer due to the apparent northward movement of the sun towards the Tropic of Cancer. This movement leads to intense heating of the northern landmass, creating a low-pressure zone. This shift is a fundamental part of the monsoon mechanism, as it draws moisture-laden winds from the southern hemisphere across the equator.

60. (2) Walker Circulation alterations suppressing rain-bearing winds
El Niño impacts the Indian monsoon by altering the Walker Circulation, a large-scale atmospheric loop over the Pacific. During El Niño, the rising limb of this circulation shifts eastward away from the Indian Ocean. This change results in sinking air and high-pressure conditions over the Indonesian and Indian regions, which suppresses cloud formation and weakens the rain-bearing monsoon winds.

61. (1) A-iii, B-ii, C-i, D-iv
Latitude ensures the southern half of India remains tropical. Altitude causes temperatures to drop in mountain stations like Shimla. Distance from the sea results in moderate coastal temperatures due to maritime influence. Ocean currents, by affecting sea surface temperatures, can amplify or dampen the moisture content and strength of the monsoon winds, indirectly impacting the overall climatic patterns.

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62. (4) Pune - Located on the windward side
Leh is dry due to its rain shadow position and high altitude. Jaisalmer's aridity is linked to the parallel alignment of the Aravallis. The Coromandel Coast is dry in summer because it is parallel to the winds. However, Pune actually receives less rainfall because it is located on the leeward (rain shadow) side of the Western Ghats, not the windward side.

63. (1) Arabian Sea
The term 'Monsoon' was first used by Arab seafarers and traders who navigated the Arabian Sea. They observed the distinct seasonal reversal of wind directions, which they used to time their voyages between the Horn of Africa and the Indian coast. They referred to these winds as 'mausim', meaning seasons, which was later anglicized into the word 'monsoon'.

64. (3) I, II and V only
The Aravallis divide Rajasthan's climate, and Mount Abu is the state's wettest point. 'Mawath' is crucial winter rain for Rabi crops. However, Rajasthan is not entirely 'Amw'; it has arid and semi-arid zones. Furthermore, while the Arabian Sea branch is closer, most of Rajasthan's effective rainfall actually comes from the Bay of Bengal branch, making statements III and IV incorrect.

65. (2) Punjab
The retreating monsoon, or Northeast monsoon, brings rainfall to southeastern India, including Tamil Nadu, Andhra Pradesh, and parts of the southern interior. This occurs between October and December. Punjab, however, is located in the northwest and receives its winter rainfall from Western Disturbances, not the retreating monsoon. Its climate during this period is typically dominated by dry continental winds.

66. (1) Break in the monsoon
A 'Break in the monsoon' refers to the dry spells that occur during the southwest monsoon

CHAPTER 11

Irrigation : Types, Sources and Major Projects

1. Which of the following best describes the primary reason for the high dependency on irrigation in Indian agriculture?
(1) Cultivation of exclusively water-intensive commercial crops across diverse agro-climatic zones
(2) Erratic and spatially uneven distribution of seasonal monsoon rainfall
(3) Total lack of perennial river systems across the vast northern plains of the country
(4) Administrative mandates restricting rainfed farming to increase canal utilization
(5) Question not attempted

2. Among the various sources of irrigation in India, which source accounts for the highest net irrigated area?
(1) Tube well and well irrigation systems
(2) Surface canal irrigation networks
(3) Traditional tank irrigation reservoirs
(4) Modern drip and sprinkler systems
(5) Question not attempted

3. In the context of micro-irrigation, which of the following is an accurate definition of fertigation?
(1) The removal of excess dissolved salts from the soil surface using sprinkler systems
(2) The chemical treatment of groundwater before utilizing it in tank irrigation
(3) The application of soluble fertilizers directly to crops through irrigation water
(4) The process of applying fertilizers to the soil through heavy flooding
(5) Question not attempted

4. Read the following statements and select the correct option:
Assertion (A): Tank irrigation is highly prevalent and successful in the Peninsular region of India.
Reason (R): The undulating relief and hard rock terrain of Peninsular India form natural depressions and make digging canals and wells difficult.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

5. Which of the following regions in India represents the largest contiguous area under canal irrigation?
(1) The Malabar Coastal Plains
(2) The Deccan Plateau region
(3) The Indo-Gangetic Plains
(4) The Brahmaputra Valley
(5) Question not attempted

6. Read the following statements regarding drip irrigation:
I. It significantly reduces water loss through evaporation and deep percolation.
II. It is highly suitable for closely sown crops like wheat and rice.
III. It minimizes weed growth as water is applied directly to the root zone.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

7. Which of the following statements identifies a key operational difference between inundation canals and perennial canals?
(1) Inundation canals flow seasonally, while perennial canals flow year-round
(2) Inundation canals are in the south, while perennial canals are coastal

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with neighboring nations
(5) Question not attempted

23. Interstate water disputes in India are primarily adjudicated under the Interstate River Water Disputes Act. Under which Article of the Constitution of India was this Act enacted?
(1) Article 262
(2) Article 263
(3) Article 280
(4) Article 131
(5) Question not attempted

24. Read the following statements and select the correct option:
Assertion (A): The Cauvery river water dispute is one of the most persistent interstate conflicts in India.
Reason (R): The Cauvery basin is an international river basin shared between India and Sri Lanka.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

25. Which of the following states are the primary parties involved in the Krishna Water Disputes Tribunal?
(1) The states of Karnataka, Tamil Nadu, and Kerala
(2) The states of Odisha, Andhra Pradesh, and Chhattisgarh
(3) The states of Maharashtra, Karnataka, and Andhra Pradesh
(4) The states of Maharashtra, Madhya Pradesh, and Gujarat
(5) Question not attempted

26. Read the following statements regarding groundwater depletion in India:
I. The north-western states of Punjab and Haryana exhibit severe groundwater over-exploitation.
II. Free or highly subsidized electricity for agricultural pumps has accelerated the rate of depletion.
III. The continuous depletion of groundwater does not alter the concentration of natural contaminants like arsenic and fluoride.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III only
(3) II and III only
(4) I, II and III
(5) Question not attempted

27. Which of the following identifies the correct concept of 'Conjunctive use of water' in the context of irrigation efficiency?
(1) Relying on fresh surface water while preserving all deep groundwater reserves
(2) Utilizing treated wastewater exclusively for all types of agricultural work
(3) Integrating rainwater harvesting with purely rainfed farming techniques
(4) Planned use of surface and groundwater to maximize resource efficiency
(5) Question not attempted

28. Match List I with List II and select the correct answer using the options given below:
List I: (Traditional Rainwater Harvesting Structure)
A. Johad
B. Surangam
C. Zing
D. Eri
List II: (State)
i. Tamil Nadu
ii. Ladakh
iii. Kerala
iv. Rajasthan
(1) A-iv, B-iii, C-ii, D-i
(2) A-iv, B-i, C-ii, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

29. Which of the following pairs concerning the National Water Policy 2012 identifies an incorrect statement?
(1) It advocates for treating water as an economic good.
(2) It emphasizes the need for a National Water Framework Law.
(3) It completely prohibits the participation of the private sector in water service delivery.
(4) It establishes priority criteria for water allocation, with drinking water being pre-

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This barrage is situated at the confluence of which two rivers?
(1) Sutlej and Beas
(2) Sutlej and Ravi
(3) Beas and Ravi
(4) Chenab and Jhelum
(5) Question not attempted

16. Read the following statements regarding the Sardar Sarovar Project:
I. It is built on the Narmada River in Gujarat.
II. It provides irrigation and power benefits to Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan.
III. The Narmada Bachao Andolan strongly supported the raising of the dam's height.
IV. It is the largest dam in the Narmada Valley Project in terms of volume of concrete used.
V. The project involves a network of canals that reaches the drought-prone areas of Kutch and Saurashtra.
Which of the above statement(s) is/are correct?
(1) I, II, IV and V only
(2) I, III, IV and V only
(3) II, III and V only
(4) I, II and V only
(5) Question not attempted

17. Which of the following states are the principal partners in the Tungabhadra multipurpose project?
(1) Karnataka and Maharashtra
(2) Karnataka and Andhra Pradesh
(3) Andhra Pradesh and Tamil Nadu
(4) Telangana and Maharashtra
(5) Question not attempted

18. Match List I with List II and select the correct answer using the options given below:
List I: (Major Dam/Project)
A. Tehri Dam
B. Sardar Sarovar
C. Bhakra Nangal
D. Hirakud
List II: (Associated River)
i. Sutlej
ii. Mahanadi
iii. Bhagirathi
iv. Narmada
(1) A-iii, B-iv, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-ii, C-iv, D-i
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

19. The Tehri Dam is recognized as the tallest dam in India. In which state is it located?
(1) Himachal Pradesh
(2) Jammu and Kashmir
(3) Uttarakhand
(4) Sikkim
(5) Question not attempted

20. Which prominent environmental issue is specifically recognized as an exception to the direct agricultural benefits provided by large canal systems like the Indira Gandhi Canal?
(1) Decreased atmospheric humidity
(2) Drastic reduction in crop yields immediately upon water application
(3) Complete eradication of native flora due to extreme aridity
(4) Large scale waterlogging and secondary salinization
(5) Question not attempted

21. Read the following historical stages of the Indira Gandhi Canal project:
A. Construction of the Rajasthan Feeder
B. Formation of the Rajasthan Canal Board
C. Completion of Harike Barrage
D. Renaming of Rajasthan Canal to Indira Gandhi Canal
Which of the following represents the correct chronological order of these stages?
(1) C, B, A, D
(2) B, C, A, D
(3) C, A, B, D
(4) A, C, B, D
(5) Question not attempted

22. What is the fundamental objective of the Command Area Development (CAD) programme initiated by the Government of India?
(1) Constructing massive multi-purpose river valley hydroelectric dams
(2) Reducing gaps between irrigation potential created and utilized
(3) Transitioning farmers from traditional agriculture to agro-industries
(4) Negotiating complex water-sharing treaties

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(3) Inundation canals use groundwater, while perennial canals use rainwater
(4) Inundation canals lack barrages, while perennial canals use dams for regulation
(5) Question not attempted

8. Match List I with List II and select the correct answer using the options given below:
List I: (Irrigation Method)
A. Tank Irrigation
B. Tube well Irrigation
C. Khadin
D. Inundation Canals
List II: (Region)
i. Western Rajasthan
ii. Punjab and Haryana plains
iii. Historical floodplains of Punjab (Pre-independence)
iv. Tamil Nadu and Andhra Pradesh
(1) A-iv, B-ii, C-i, D-iii
(2) A-ii, B-iv, C-iii, D-i
(3) A-iv, B-i, C-ii, D-iii
(4) A-i, B-iii, C-iv, D-ii
(5) Question not attempted

9. What is the most significant disadvantage associated with unlined surface canal irrigation in semi-arid tracts?
(1) Rapid depletion of deep-seated underground freshwater aquifers
(2) Extremely high initial financial costs of modern mechanization
(3) Severe soil waterlogging and induced secondary salinization
(4) Total obstruction of the natural ecological flow of the river
(5) Question not attempted

10. The Bhakra Nangal Project is a joint venture of which of the following groups of states?
(1) Punjab, Haryana, and Rajasthan
(2) Himachal Pradesh, Uttarakhand, and Punjab
(3) Punjab, Haryana, and Uttar Pradesh
(4) Rajasthan, Gujarat, and Maharashtra
(5) Question not attempted

11. Read the following statements regarding the Hirakud Dam project:
I. It is built across the Mahanadi river in the state of Odisha.
II. It is one of the longest earthen dams in the world.
III. It was solely designed for hydroelectric power generation with no irrigation component.
IV. The project significantly mitigates flood situations in the Mahanadi delta.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III only
(3) II and IV only
(4) I, III and IV only
(5) Question not attempted

12. The Damodar Valley Corporation (DVC) was established primarily on the model of which renowned international river valley project?
(1) Three Gorges Dam multipurpose project located in China
(2) Tennessee Valley Authority project based in the USA
(3) Aswan High Dam hydroelectric project situated in Egypt
(4) Snowy Mountains Scheme established in Australia
(5) Question not attempted

13. Identify the correct sequence of the following major dams based on their geographical location from North to South:
(1) Bhakra Nangal, Tehri, Sardar Sarovar, Nagarjunasagar
(2) Tehri, Bhakra Nangal, Nagarjunasagar, Sardar Sarovar
(3) Bhakra Nangal, Tehri, Nagarjunasagar, Sardar Sarovar
(4) Tehri, Sardar Sarovar, Bhakra Nangal, Nagarjunasagar
(5) Question not attempted

14. Which of the following is the primary river on which the Nagarjunasagar Dam is constructed?
(1) Godavari
(2) Cauvery
(3) Tungabhadra
(4) Krishna
(5) Question not attempted

15. The Indira Gandhi Canal project receives its water supply primarily from the Harike Barrage.

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emptive.
(5) Question not attempted

30. Which of the following is considered the most appropriate remedial measure for reclaiming soils that have developed severe salinity due to excessive canal irrigation?
(1) Applying minimal water amounts frequently to the soil surface
(2) Abandoning the affected land completely for several decades
(3) Increasing the heavy application of synthetic nitrogenous fertilizers
(4) Using gypsum soil amendments followed by adequate leaching
(5) Question not attempted

31. Read the following statements regarding the Indira Gandhi Canal project:
I. It is the longest canal system in India.
II. The main canal passes exclusively through the districts of Hanumangarh and Bikaner.
III. It features several lift canals on its left bank to supply water to higher elevations.
IV. It is completely unaffected by the problems of shifting sand dunes.
Which of the above statement(s) is/are correct?
(1) I and III only
(2) II and IV only
(3) I, II and III only
(4) I, III and IV only
(5) Question not attempted

32. In the context of irrigation types, which characteristic is critical for the success of tube well irrigation in the Indo-Gangetic plains?
(1) Presence of steep terrain generating high hydraulic heads across the region
(2) Unconsolidated sedimentary aquifers with high groundwater recharge potential
(3) Prevalence of impermeable igneous rock formations close to the ground surface
(4) High incidence of natural artesian springs occurring throughout the plains
(5) Question not attempted

33. Which of the following best explains why sprinkler irrigation is considered highly suitable for areas with undulating topography?
(1) Utilizing heavy flooding that naturally settles into lower surface depressions
(2) Eliminating the need for any land leveling operations before applying water
(3) Ensuring water flows rapidly down the slopes without causing soil erosion
(4) Bypassing the root zone to directly hydrate the foliage of the plants
(5) Question not attempted

34. Which of the following districts of Rajasthan does NOT fall under the direct command area of the main Indira Gandhi Canal or its major lift branches?
(1) Dungarpur
(2) Jaisalmer
(3) Bikaner
(4) Churu
(5) Question not attempted

35. Which of the following statements about the Bhakra Nangal reservoir is factual?
(1) The large reservoir created behind the dam is named Gandhi Sagar
(2) It relies primarily on the seasonal water flow from the Yamuna river
(3) The reservoir created behind the Bhakra dam is known as Gobind Sagar
(4) It was designed to provide drinking water exclusively to New Delhi
(5) Question not attempted

36. Read the following statements regarding the Narmada Water Disputes Tribunal:
I. It was constituted under the Interstate River Water Disputes Act.
II. It adjudicated the dispute between Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan.
III. It restricted the height of the Sardar Sarovar Dam permanently to 90 meters.
IV. It mandated proper rehabilitation and resettlement of project-affected families.
V. It allocated the maximum share of Narmada water to Madhya Pradesh.
Which of the above statement(s) is/are incorrect?
(1) I and V only
(2) III only
(3) II, III and IV only
(4) IV and V only
(5) Question not attempted

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37. Which of the following statements about the Tungabhadra river is correct?
(1) It flows westward and drains directly into the Arabian Sea
(2) It originates from the high Amarkantak plateau in Central India
(3) It serves as a major right-bank tributary of the Krishna river
(4) It is an independent perennial river located in Northern India
(5) Question not attempted

38. Match List I with List II and select the correct answer using the options given below:
List I: (Interstate Water Dispute)
A. Ravi and Beas Water Dispute
B. Mahadayi Water Dispute
C. Vamsadhara Water Dispute
D. Godavari Water Dispute
List II: (Rivers involved)
i. Andhra Pradesh and Odisha
ii. Punjab, Haryana, and Rajasthan
iii. Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh, and Odisha
iv. Goa, Karnataka, and Maharashtra
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iv, D-iii
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

39. Read the following statements and select the correct option:
Statement I: Over-exploitation of groundwater in coastal areas can lead to saline water intrusion into freshwater aquifers.
Statement II: The hydraulic gradient reverses when the water table falls below mean sea level, allowing seawater to move inland.
(1) Statement I is correct but Statement II is incorrect.
(2) Statement I is incorrect but Statement II is correct.
(3) Both Statement I and Statement II are correct, and Statement II is the correct explanation of Statement I.
(4) Both Statement I and Statement II are correct, but Statement II is not the correct explanation of Statement I.
(5) Question not attempted

40. The phenomenon of capillary action in poorly drained, heavily irrigated soils leads to which specific agricultural problem?
(1) Soil salinization
(2) Nitrogen fixation
(3) Accelerated soil erosion
(4) Humus formation
(5) Question not attempted

41. In the context of India's major irrigation projects, identify the correct pair:
(1) Damodar Valley Corporation - Regulates the Mahanadi river basin system
(2) Sardar Sarovar Dam - Constructed across the west-flowing Tapi river
(3) Tehri Dam - Built at the confluence of Bhagirathi and Bhilangna rivers
(4) Hirakud Dam - Built across the Godavari river in the state of Odisha
(5) Question not attempted

42. Which of the following components is primarily absent from the conventional scope of the Command Area Development programme?
(1) Construction of massive interstate gravity dams
(2) Construction of field channels and field drains
(3) Land leveling and shaping
(4) Promotion of conjunctive use of surface and groundwater
(5) Question not attempted

43. Which of the following is an odd one out regarding the beneficiary states of the Indira Gandhi Canal project?
(1) State of Rajasthan
(2) State of Haryana
(3) State of Punjab
(4) Madhya Pradesh
(5) Question not attempted

44. Read the following statements and select the correct option:
Assertion (A): Drip irrigation is highly promoted under the Per Drop More Crop component of the PMKSY.
Reason (R): Drip irrigation guarantees a higher rate of deep percolation, thereby efficiently recharging underground aquifers.
(1) Both A and R are true and R is the correct

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explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

45. Which of the following states is considered a major beneficiary of the Damodar Valley Corporation project in terms of flood control and irrigation?
(1) Bihar and Uttar Pradesh
(2) Odisha and Chhattisgarh
(3) West Bengal and Jharkhand
(4) Assam and Meghalaya
(5) Question not attempted

46. Read the following statements regarding Khadin:
I. It is primarily designed to harvest surface runoff for agriculture in arid rocky tracts.
II. It is extensively used in the Jaisalmer district of Rajasthan.
III. It consists of an earthen embankment built across the lower hill slopes.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

47. Which of the following best defines "Irrigation Efficiency"?
(1) Ratio of water consumed by crops to water delivered at the canal head
(2) Total volume of water stored in a reservoir divided by the catchment area
(3) Rate at which deep groundwater is extracted by a high-capacity pump unit
(4) Speed of water flowing through the main feeder canal during peak seasons
(5) Question not attempted

48. Match List I with List II and select the correct answer using the options given below:
List I: (Lift Canal of IGNP - Old Name)
A. Bikaner-Lunkaransar Lift Canal
B. Nohar-Sahwa Lift Canal
C. Kolayat Lift Canal
D. Phalodi Lift Canal
List II: (New Name)
i. Dr. Karni Singh Lift Canal
ii. Guru Jambheshwar Lift Canal
iii. Kanwar Sen Lift Canal
iv. Chaudhari Kumbharam Lift Canal
(1) A-iii, B-iv, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

49. Based on the guidelines of typical National Water Policies in India, select the correct descending order (highest priority first) of the following water allocation priorities:
A. Ecology
B. Drinking water
C. Agro-industries
D. Irrigation
E. Hydropower
(1) B, D, E, A, C
(2) B, D, A, E, C
(3) B, A, D, E, C
(4) D, B, E, C, A
(5) Question not attempted

NODIA

50. Read the following statements and select the correct option:
Statement I: The Indira Gandhi Canal has transformed barren deserts into lush agricultural fields in Western Rajasthan.
Statement II: The extensive canal network in the Thar desert has caused severe waterlogging and problems of 'Sem' in several areas like Badopal.
(1) Statement I is correct but Statement II is incorrect.
(2) Statement I is incorrect but Statement II is correct.
(3) Both Statement I and Statement II are correct, and Statement II is a direct consequence of the activities described in Statement I.
(4) Both Statement I and Statement II are correct, but they are completely unrelated.
(5) Question not attempted

51. Read the following statements regarding Rainwater Harvesting (RWH):
I. Rooftop rainwater harvesting is primarily an urban phenomenon in modern times.
II. RWH helps in reducing peak storm runoff

and thus mitigates urban flooding.
III. It strictly involves the storage of water in surface tanks without any groundwater recharge.
IV. The Central Ground Water Board highly recommends RWH to tackle overexploited dark zones.
Which of the above statement(s) is/are correct?
(1) I, II and IV only
(2) II, III and IV only
(3) I, II and III only
(4) I, III and IV only
(5) Question not attempted

52. What is the fundamental difference between surface water irrigation and groundwater irrigation?
(1) Surface irrigation requires no infrastructure, whereas groundwater uses dams
(2) Surface irrigation occurs in the south, while groundwater is in the north
(3) Groundwater irrigation causes far more waterlogging than surface canal systems
(4) Surface water uses rivers and canals, while groundwater uses subsurface wells
(5) Question not attempted

53. Identify the correct East to West geographical sequence of the major rivers of the Peninsular plateau that feature prominent irrigation projects:
(1) Mahanadi, Godavari, Krishna, Narmada
(2) Narmada, Krishna, Godavari, Mahanadi
(3) Mahanadi, Narmada, Godavari, Krishna
(4) Godavari, Mahanadi, Krishna, Narmada
(5) Question not attempted

54. The Tehri dam project has been historically controversial due to which primary environmental and geographical reason?
(1) The complete destruction of the Western Ghats biodiversity hotspot
(2) Its location in a highly active seismic zone in the Himalayas
(3) Its role in completely drying up the Ganges river during the monsoon
(4) The massive inter-basin transfer of water to the Brahmaputra
(5) Question not attempted

55. Which of the following pairs concerning the Nagarjunasagar project is correctly matched?
(1) Lal Bahadur Canal - Left bank canal of the Tungabhadra project
(2) Jawahar Canal - Right bank canal of Bhakra Nangal
(3) Jawahar Canal - Right bank canal of Indira Gandhi Canal
(4) Jawahar Canal - Right bank canal of Nagarjunasagar
(5) Question not attempted

56. Read the following statements regarding tank irrigation:
I. It is largely dependent on the vagaries of the monsoon.
II. It requires massive capital investment comparable to major multi-purpose dams.
III. High evaporation loss is a significant drawback due to shallow depths.
IV. Siltation continuously reduces the storage capacity of tanks.
V. It is the dominant method of irrigation in the flat plains of Punjab.
Which of the above statement(s) is/are incorrect?
(1) I and III only
(2) II and V only
(3) I, II and IV only
(4) III and IV only
(5) Question not attempted

57. Which of the following accurately describes the 'dark zones' in the context of groundwater utilization?
(1) Regions where the local groundwater is completely devoid of all sunlight
(2) Areas where the groundwater is naturally blackish due to coal seam depth
(3) Blocks where water extraction exceeds the annual rechargeable volume
(4) Subsurface areas reserved exclusively for the disposal of industrial waste
(5) Question not attempted

58. Match List I with List II and select the correct answer using the options given below:
List I: (Dam/Project)
A. Bhakra Dam
B. Hirakud Dam
C. Sardar Sarovar Dam
D. Nagarjunasagar Dam

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List II: (Key Geographical Feature/Fact)
i. Longest earthen dam in India
ii. Built on the Krishna river in a masonry structure
iii. Highest straight gravity dam in India
iv. Largest dam of the Narmada Valley Project
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-iii, C-ii, D-iv
(3) A-iii, B-ii, C-iv, D-i
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

59. Which of the following is NOT an objective listed under the National Water Policy?
(1) Ensuring equitable distribution of water resources
(2) Promoting water conservation and efficiency
(3) Addressing the impacts of climate change on water availability
(4) Encouraging privatization of all surface river networks
(5) Question not attempted

60. The Rajasthan Feeder Canal, which carries water to the main Indira Gandhi Canal, has its longest traverse through which state before entering Rajasthan?
(1) Haryana
(2) Punjab
(3) Gujarat
(4) Madhya Pradesh
(5) Question not attempted

61. Read the following states and select the correct sequence representing their total area under tank irrigation in descending order:
A. Andhra Pradesh
B. Tamil Nadu
C. Rajasthan
D. Punjab
(1) B, A, C, D
(2) A, B, C, D
(3) B, C, A, D
(4) D, C, A, B
(5) Question not attempted

62. The 'Warabandi' system, prominently practiced in the canal command areas of north-western India, is best defined as:
(1) A method to physically line earthen canals with high-quality concrete
(2) A financial subsidy scheme for the purchase of diesel-powered water pumps
(3) A traditional water harvesting technique used exclusively in Rajasthan
(4) A rotational system for equitable distribution of canal water to farmers
(5) Question not attempted

63. Which multi-purpose river valley project was the first to be undertaken in independent India?
(1) Damodar Valley Corporation
(2) Bhakra Nangal Dam Project
(3) Hirakud River Dam Project
(4) Kosi River Valley Project
(5) Question not attempted

64. Read the following statements and select the correct option:
Assertion (A): The adoption of micro-irrigation systems is heavily subsidized by the government in arid regions.
Reason (R): Micro-irrigation systems completely eliminate the dependency of agriculture on groundwater aquifers.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

65. The Tungabhadra multipurpose project features a major masonry dam built near which historically significant site in Karnataka?
(1) City of Mysore
(2) Hampi (Hosapete)
(3) City of Bijapur
(4) Srirangapatna
(5) Question not attempted

NODIA

66. Read the following traditional water conservation structures native to Rajasthan:
I. Tanka
II. Bawari (Stepwell)
III. Nadi
Which of the above are correct?
(1) I and II only
(2) II and III only
(3) I and III only

28. (1) A-iv, B-iii, C-ii, D-i
Johads are traditional small earthen check dams used in Rajasthan for rainwater harvesting. Surangams are unique horizontal tunnel systems found in the laterite hills of Kerala. Zings are small tanks used to collect glacial meltwater in the high-altitude region of Ladakh. Eris represent the ancient and effective tank irrigation systems widely distributed throughout the state of Tamil Nadu.

29. (3) It completely prohibits the participation of the private sector in water service delivery.
The National Water Policy 2012 recognizes water as an economic good and emphasizes the need for a comprehensive National Water Framework Law. It prioritizes drinking water as the most fundamental requirement. However, the policy does not prohibit private sector participation; instead, it encourages public-private partnerships and private sector engagement in various aspects of water resource management and delivery.

30. (4) Using gypsum soil amendments followed by adequate leaching
Soils that have become saline due to excessive irrigation require specific chemical and physical treatments for reclamation. The application of gypsum helps in replacing exchangeable sodium with calcium, which improves the soil structure. Following this, adequate leaching with fresh water is necessary to wash away the dissolved salts from the root zone, eventually restoring the land's agricultural productivity and health.

31. (1) I and III only
The Indira Gandhi Canal is indeed the longest canal system in India. It incorporates several lift canals on its left bank to transport water to higher elevations. However, it passes through more than just two districts, and it is significantly affected by the movement of shifting sand dunes, which necessitates regular maintenance and the implementation of stabilization measures.

32. (2) Unconsolidated sedimentary aquifers with high groundwater recharge potential
The success of tube well irrigation in the Indo-Gangetic plains is primarily due to the region's unique geology. The deep layers of unconsolidated alluvial sediments create highly productive aquifers with high storage capacity. These aquifers are easily recharged by perennial rivers and seasonal rainfall, providing a reliable and accessible source of groundwater for intensive agricultural activities across the entire plain.

33. (2) Eliminating the need for any land leveling operations before applying water
Sprinkler irrigation is highly effective for undulating or hilly terrains because it delivers water through a network of pipes and nozzles, mimicking natural rainfall. Unlike surface irrigation methods that require flat land to ensure even water distribution, sprinklers can apply water uniformly over uneven surfaces. This eliminates the expensive and often ecologically damaging requirement for extensive land leveling before cultivation.

34. (1) Dungarpur
The Indira Gandhi Canal project was designed to transform the arid regions of northwestern Rajasthan. Its main canal and extensive lift branches provide water to districts such as Jaisalmer, Bikaner, Churu, Hanumangarh, and Sriganganagar. In contrast, Dungarpur is located in the southern part of Rajasthan, far from the canal's network, and does not fall within its designated command area.

35. (3) The reservoir created behind the Bhakra dam is known as Gobind Sagar
The massive reservoir formed by the Bhakra Dam on the Sutlej River is named Gobind Sagar, in honor of Guru Gobind Singh, the tenth Sikh Guru. This reservoir is one of the largest in India and serves as a vital source for irrigation and hydroelectric power. It is a key component of the Bhakra Nangal project, benefiting multiple states.

36. (2) III only
The Narmada Water Disputes Tribunal was legally constituted to allocate the Narmada River waters among Gujarat, Madhya Pradesh, Maharashtra, and Rajasthan. While it mandated rehabilitation and allocated significant water to Madhya Pradesh, it did not permanently restrict the Sardar Sarovar Dam's height to 90 meters. The height was eventually increased much further to maximize the project's overall irrigation and power benefits.

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74. Read the following statements and select the correct option:
Statement I: The National Water Policy of India emphasizes that water is a scarce national resource that must be planned and managed on a river basin approach.
Statement II: A river basin is a distinct hydrological unit, making it the most scientific basis for multi-sectoral water planning.
(1) Statement I is correct but Statement II is incorrect.
(2) Statement I is incorrect but Statement II is correct.
(3) Both Statement I and Statement II are correct, and Statement II is the correct explanation of Statement I.
(4) Both Statement I and Statement II are correct, but Statement II is not the correct explanation of Statement I.
(5) Question not attempted

75. Which of the following is NOT a direct benefit associated with the implementation of a comprehensive Command Area Development (CAD) program?
(1) Significant increase in the overall cropping intensity of the region
(2) Equitable distribution of water to the vulnerable tail-end farmers
(3) Reduction in waterlogging through improved drainage system networks
(4) Immediate doubling of the total annual rainfall in the command area
(5) Question not attempted

76. Read the following statements regarding multi-purpose river valley projects:
I. They simultaneously serve irrigation, power generation, flood control, and navigation.
II. Jawaharlal Nehru proudly referred to them as the "Temples of Modern India".
III. The environmental impact of these large dams has been universally negligible.
IV. They often require the inundation of large tracts of forests and arable land.
V. The Hirakud Dam is an example of a multi-purpose project.
Which of the above statement(s) is/are correct?
(1) I, II, IV and V only
(2) I, III, IV and V only
(3) II, III and V only
(4) I, II and IV only
(5) Question not attempted

77. The term 'Aquifer' refers to which of the following?
(1) A man-made surface reservoir used for storing seasonal rainwater runoff
(2) An engineered canal system designed to divert excess floodwater flows
(3) A geological formation capable of storing and yielding groundwater
(4) A traditional stepwell structure found throughout the Western India
(5) Question not attempted

78. Match List I with List II and select the correct answer using the options given below:
List I: (River System)
A. Sutlej System
B. Krishna River
C. Mahanadi Basin
D. Narmada Valley
List II: (Associated Canal/Project)
i. Nagarjunasagar Right Canal
ii. Sirhind Canal
iii. Narmada Main Canal
iv. Bargarh Canal
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

79. What is the primary cause for the emergence of interstate water disputes in India?
(1) Mismatch between river and state boundaries and limited resources
(2) Complete lack of any federal laws to mediate such complex disputes
(3) Total drying up of all major peninsular rivers during the winter
(4) Exclusive control of all river waters by the Central Government
(5) Question not attempted

80. Which of the following methods of irrigation is considered the most appropriate for an agricultural field characterized by highly permeable sandy soil where water retention is extremely poor?
(1) Basin flooding irrigation

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(4) I, II and III
(5) Question not attempted

67. Which of the following rivers is an exception, as it is NOT part of the interstate water dispute generally known as the Cauvery Water Dispute?
(1) River Cauvery
(2) River Hemavati
(3) River Tungabhadra
(4) River Kabini
(5) Question not attempted

68. Match List I with List II and select the correct answer using the options given below:
Note: Treat A and B as being on the same river but distinct dams.
List I: (DVC Dams)
A. Tilaiya Dam
B. Maithon Dam
C. Panchet Dam
D. Konar Dam
List II: (River/Tributary)
i. Barakar River
ii. Barakar River
iii. Damodar River
iv. Konar River
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

69. The problem of 'Sem' in the districts of Hanumangarh and Sriganganagar is caused by which of the following mechanisms?
(1) Intense wind erosion caused by excessive dry farming practices
(2) Sudden depletion of deep aquifers due to excessive tube wells
(3) Waterlogging and rising water tables due to intense canal irrigation
(4) Industrial effluent discharge into the seasonal Ghaggar riverbed
(5) Question not attempted

70. The Sardar Sarovar Dam was surrounded by immense controversy primarily spearheaded by the Narmada Bachao Andolan. What was the core focus of this movement?
(1) Disputes over water royalty payments between Gujarat and Maharashtra
(2) Environmental concerns and displacement of tribal communities
(3) Demands to completely shift the dam's physical location to Madhya Pradesh
(4) Movements to convert the project into an exclusively hydroelectric plant
(5) Question not attempted

71. Read the following statements regarding the geographical distribution of irrigation:
I. Uttar Pradesh has the largest total irrigated area in India.
II. Punjab has the highest percentage of its net sown area under irrigation.
III. Mizoram heavily relies on dense canal networks for agriculture.
IV. Well irrigation is completely absent in the state of Gujarat.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and IV only
(3) I, II and III only
(4) II and IV only
(5) Question not attempted

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72. Which of the following is considered the primary reason for the declining efficiency of tank irrigation in Peninsular India over the past few decades?
(1) Encroachment of tank beds, siltation, and poor maintenance
(2) Shift of agricultural focus toward plantation crop systems
(3) Strict government bans on the usage of surface water sources
(4) Earthquakes destroying the retaining walls of irrigation tanks
(5) Question not attempted

73. Identify the most accurate statement regarding the Indira Gandhi Canal project:
(1) It is exclusively a gravity-flow canal with no lifting required anywhere along its route.
(2) It bypasses the arid districts and solely waters the Aravalli ranges.
(3) Its command area development includes extensive afforestation to stabilize sand dunes.
(4) It draws its entire water supply from the Yamuna river.
(5) Question not attempted

ANSWERS

1. (2) Erratic and spatially uneven distribution of seasonal monsoon rainfall
Indian agriculture relies heavily on irrigation primarily due to the monsoon's unpredictable nature and its skewed spatial and temporal distribution. Rainfall is concentrated within a few months, leaving most of the year dry. Consequently, artificial water supply becomes essential to ensure crop survival and to support multiple cropping cycles across various agro-climatic zones of the country.

2. (1) Tube well and well irrigation systems
Ground water resources, utilized through tube wells and traditional wells, constitute the largest share of net irrigated area in India. This dominance is attributed to their widespread availability, decentralized nature, and the flexibility they offer to individual farmers. They currently surpass surface canals and tanks as the primary source for meeting agricultural water requirements on a nationwide scale.

3. (3) The application of soluble fertilizers directly to crops through irrigation water
Fertigation is an advanced agricultural technique where liquid or water-soluble fertilizers are injected into the irrigation system. This method allows for the precise delivery of nutrients directly to the plant's root zone. It improves nutrient use efficiency, reduces fertilizer wastage, and minimizes environmental contamination compared to traditional broadcasting methods used in conventional farming and traditional soil management.

4. (1) Both A and R are true and R is the correct explanation of A.
The hard rock geology and undulating topography of the Peninsular plateau facilitate the natural collection of rainwater in depressions, making tank irrigation highly suitable. These physical conditions simultaneously make the construction of canals and the digging of wells extremely difficult and expensive. Therefore, traditional tanks remain the most effective and prevalent irrigation method in this specific geographical region.

5. (3) The Indo-Gangetic Plains
The Indo-Gangetic Plains feature the largest contiguous area under canal irrigation due to the presence of perennial Himalayan rivers. The flat terrain and soft alluvial soil facilitate the easy construction of extensive canal networks. These factors, combined with high agricultural demand, have led to the development of some of the world's most massive and integrated irrigation systems.

6. (3) I and III only
Drip irrigation systems deliver water precisely to the root zone, which significantly minimizes losses from evaporation and deep percolation. By keeping the non-crop areas dry, this method effectively restricts the growth of weeds. However, it is primarily designed for wide-spaced horticultural crops rather than closely sown field crops like rice or wheat, which usually require flooding.

7. (4) Inundation canals lack barrages, while perennial canals use dams for regulation
Perennial canals are sophisticated systems that draw water from reservoirs or rivers regulated by dams and barrages, ensuring a steady flow throughout the year. In contrast, inundation canals are simpler channels dug directly from riverbanks without any regulatory structures. They only receive water when the river level rises significantly during floods, making them highly seasonal and unpredictable.

8. (1) A-iv, B-ii, C-i, D-iii
Tank irrigation is the traditional mainstay in the hard-rock terrains of Tamil Nadu and Andhra Pradesh. Tube wells are extensively utilized in the fertile alluvial plains of Punjab and Haryana. Khadins represent a unique rainwater harvesting practice in Western Rajasthan. Historically, inundation canals were common in the pre-independence floodplains of Punjab before the development of perennial systems.

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9. (3) Severe soil waterlogging and induced secondary salinization
In semi-arid regions, unlined surface canals often lead to significant seepage of water into the surrounding soil. This process causes the water table to rise, eventually reaching the root zone and creating waterlogged conditions. The subsequent evaporation of this water leaves behind harmful salts at the surface, leading to secondary salinization and long-term degradation of agricultural productivity.

10. (1) Punjab, Haryana, and Rajasthan
The Bhakra Nangal Project is one of India's earliest and most significant multipurpose river valley schemes. It was developed as a collaborative effort between the states of Punjab, Haryana, and Rajasthan. This massive engineering undertaking utilizes the waters of the Sutlej River to provide essential irrigation and hydroelectric power, supporting the agricultural and industrial growth of these participating states.

11. (2) III only
Hirakud Dam is a prominent multipurpose project located on the Mahanadi River in Odisha. It is globally recognized as one of the longest earthen dams. While it generates significant hydroelectric power and provides flood control for the delta region, it was also specifically designed with a major irrigation component. Stating that it lacks an irrigation purpose is factually incorrect.

12. (2) Tennessee Valley Authority project based in the USA
The Damodar Valley Corporation, established in 1948, was the first multipurpose river valley project of independent India. It was explicitly modeled after the Tennessee Valley Authority in the United States. The corporation was designed to manage the Damodar River basin through a unified approach focusing on flood control, irrigation, power generation, and overall socio-economic development of the region.

13. (1) Bhakra Nangal, Tehri, Sardar Sarovar, Nagarjunasagar
Geographically, the Bhakra Nangal Dam on the Sutlej in Himachal Pradesh is the northernmost. Moving south, the Tehri Dam is located in the Himalayan state of Uttarakhand. Further south, the Sardar Sarovar Dam is situated on the Narmada River in Gujarat. Finally, the Nagarjunasagar Dam on the Krishna River lies in the southern part of the Indian peninsula.

14. (4) Krishna
The Nagarjunasagar Dam is a massive masonry structure built across the Krishna River. It is situated on the border between the states of Andhra Pradesh and Telangana. As one of the earliest multipurpose projects in southern India, it plays a vital role in providing irrigation to several districts and generating substantial hydroelectric power for the regional electrical grid.

15. (1) Sutlej and Beas
Harike Barrage, also known as Harike Pattan, is situated at the confluence of the Sutlej and Beas rivers in the state of Punjab. This critical water regulation structure serves as the starting point for the Indira Gandhi Canal. It diverts the combined flow of these Himalayan rivers to provide irrigation to the arid regions of western Rajasthan.

16. (1) I, II, IV and V only
The Sardar Sarovar Project is a major terminal dam on the Narmada River, benefiting Gujarat, Rajasthan, Maharashtra, and Madhya Pradesh. It utilizes a massive volume of concrete and serves drought-prone areas like Kutch. However, the Narmada Bachao Andolan was a prominent social movement that strongly opposed the project, specifically protesting against the raising of the dam's height.

17. (2) Karnataka and Andhra Pradesh
The Tungabhadra multipurpose project is a joint venture primarily between the states of Karnataka and Andhra Pradesh. It involves a dam constructed across the Tungabhadra River, which is a major tributary of the Krishna. The project was designed to provide irrigation, generate hydroelectric power, and assist in flood control for the semi-arid regions within both participating states.

18. (1) A-iii, B-iv, C-i, D-ii
The Tehri Dam is built on the Bhagirathi River in Uttarakhand. The Sardar Sarovar Dam is a major project on the Narmada River in Gujarat. The Bhakra Nangal Dam is situated on the Sutlej River in the northern part of India. The Hirakud

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Dam is a massive earthen structure constructed across the Mahanadi River in Odisha.

19. (3) Uttarakhand
The Tehri Dam is the tallest dam in India and one of the highest in the world. It is located on the Bhagirathi River in the Tehri Garhwal district of Uttarakhand. This multi-purpose rock and earth-fill embankment dam is vital for hydroelectric power generation, irrigation, and providing municipal water supply to several regions, including the national capital.

20. (4) Large scale waterlogging and secondary salinization
While the Indira Gandhi Canal has revolutionized agriculture in the Thar Desert, it has also led to significant environmental challenges. The introduction of intensive irrigation in areas with poor natural drainage and high evaporation rates has caused the water table to rise. This results in widespread waterlogging and secondary soil salinization, which negatively affects the long-term fertility of the land.

21. (1) C, B, A, D
The historical development of the project began with the completion of the Harike Barrage in 1953. This was followed by the formation of the Rajasthan Canal Board in 1958 to oversee construction. The Rajasthan Feeder was then built to transport water. Finally, in 1984, the Rajasthan Canal was officially renamed the Indira Gandhi Canal to honor the former Prime Minister.

22. (2) Reducing gaps between irrigation potential created and utilized
The Command Area Development programme was launched by the Government of India to optimize the benefits of major and medium irrigation projects. Its primary objective is to bridge the significant gap between the irrigation potential created through infrastructure and the actual potential utilized on the field. This is achieved through better water management, land leveling, and canal maintenance.

23. (1) Article 262
Article 262 of the Indian Constitution empowers Parliament to provide for the adjudication of disputes relating to the use, distribution, or control of the waters of any interstate river or river valley. Under this specific constitutional provision, the Interstate River Water Disputes Act of 1956 was enacted, which allows for the establishment of tribunals to resolve such conflicts.

24. (3) A is true but R is false
The Cauvery river water dispute is indeed one of the most long-standing and intense interstate conflicts in India, primarily involving Karnataka and Tamil Nadu. However, the Cauvery is entirely an internal river of India and does not form an international basin with Sri Lanka. Therefore, while the assertion regarding the conflict's persistence is true, the reason provided is factually incorrect.

25. (3) The states of Maharashtra, Karnataka, and Andhra Pradesh
The Krishna Water Disputes Tribunal was established to resolve the long-standing conflict regarding the sharing of Krishna River waters. The primary parties involved in this dispute are the riparian states of Maharashtra, Karnataka, and Andhra Pradesh. Later, after the reorganization of the state, Telangana also became a significant stakeholder in the ongoing legal proceedings and water allocation negotiations.

26. (2) III only
Groundwater over-exploitation is severe in states like Punjab and Haryana, often fueled by subsidized electricity. Contrary to the incorrect claim, continuous depletion actually alters the concentration of natural contaminants. As water levels drop, the remaining water can interact more with mineral deposits, often increasing the concentration of harmful substances like arsenic and fluoride, thereby deteriorating the overall water quality.

27. (4) Planned use of surface and groundwater to maximize resource efficiency
Conjunctive use of water refers to the strategic and coordinated management of both surface water and groundwater resources. By integrating these two sources, irrigation efficiency is maximized while the negative impacts of relying on a single source, such as waterlogging or aquifer depletion, are minimized. This balanced approach ensures a more reliable and sustainable water supply for agricultural and other needs.

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(2) Drip irrigation
(3) Furrow irrigation
(4) Unlined canal irrigation
(5) Question not attempted

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37. (3) It serves as a major right-bank tributary of the Krishna river.
The Tungabhadra River is formed by the confluence of the Tunga and Bhadra rivers in the Western Ghats of Karnataka. It flows in a northeasterly direction across the Deccan Plateau. It is a significant right-bank tributary of the Krishna River, joining it in Andhra Pradesh. The river is essential for the agricultural economy of the semi-arid regions it traverses.

38. (1) A-ii, B-iv, C-i, D-iii
The Ravi and Beas dispute involves Punjab, Haryana, and Rajasthan regarding surplus water sharing. The Mahadayi dispute is a conflict between Goa, Karnataka, and Maharashtra. The Vamsadhara dispute involves Andhra Pradesh and Odisha over the construction of dams. The Godavari dispute includes several states like Maharashtra, Andhra Pradesh, Karnataka, Madhya Pradesh, and Odisha, reflecting the river's extensive drainage basin.

39. (3) Both Statement I and Statement II are correct, and Statement II is the correct explanation of Statement I.
Over-exploitation of groundwater in coastal regions causes the water table to drop. If it falls below mean sea level, the natural hydraulic gradient that keeps freshwater flowing towards the sea is reversed. This allows saline seawater to migrate inland and infiltrate the freshwater aquifers. This process, known as saltwater intrusion, severely degrades the quality of local water resources for all uses.

40. (1) Soil salinization
In poorly drained areas with high irrigation levels, water can accumulate near the surface. As the surface water evaporates, capillary action draws more water and dissolved salts up from the lower soil layers. Once the water evaporates, these salts are left behind on the surface. Over time, this process leads to significant soil salinization, which inhibits plant growth and land quality.

41. (3) Tehri Dam - Built at the confluence of Bhagirathi and Bhilangna rivers.
The Tehri Dam is correctly identified as being located at the confluence of the Bhagirathi and Bhilangna rivers in Uttarakhand. Other options are incorrect: the Damodar Valley Corporation regulates the Damodar basin, not the Mahanadi; the Sardar Sarovar is on the Narmada, not the Tapi; and the Hirakud Dam is on the Mahanadi River, not the Godavari River.

42. (1) Construction of massive interstate gravity dams.
The Command Area Development programme focuses on the "on-farm" development aspects of irrigation. Its scope includes constructing field channels, land leveling, and promoting conjunctive water use to improve efficiency at the farm level. The construction of massive interstate gravity dams is a primary irrigation activity that takes place before the CAD programme begins and is generally handled by different departments.

43. (4) Madhya Pradesh
The Indira Gandhi Canal project is a collaborative venture that primarily involves the states of Rajasthan, Punjab, and Haryana. These states share the water from the Ravi and Beas rivers diverted through the canal system. Madhya Pradesh, while a major state in Central India, is not a beneficiary of this specific canal project and does not receive any water from its network.

44. (3) A is true but R is false
Drip irrigation is indeed strongly promoted under the "Per Drop More Crop" component of Pradhan Mantri Krishi Sinchayee Yojana due to its high water-use efficiency. However, the reason provided is false; drip irrigation is designed to deliver water directly to the root zone and minimize deep percolation, rather than increasing it, as deep percolation represents a loss of water.

45. (3) West Bengal and Jharkhand
The Damodar Valley Corporation project was primarily designed to manage the Damodar River, which flows through the states of Jharkhand and West Bengal. These two states are the principal beneficiaries of the project's various components, including flood control measures, irrigation networks, and hydroelectric and thermal power plants, which have significantly contributed to the industrial and agricultural development of the valley.

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mustard in India.
III. It requires a cool and dry climate and is susceptible to frost.
Which combination of the above statements is correct?
(1) I and II
(2) II and III
(3) I and III
(4) I, II and III
(5) Question not attempted

29. Which of the following is the standard measure used to quantify raw cotton production in Indian agricultural statistics?
(1) Bushels
(2) Quintals per hectare strictly
(3) Bales of 170 kg each
(4) Bales of 100 kg each
(5) Question not attempted

30. The Indian jute industry faces tough competition in the international market. What is the primary cause for the declining demand for traditional jute packaging materials globally?
(1) The total depletion of alluvial soils in the Hooghly basin due to intensive farming.
(2) The ban on jute products by the World Trade Organization to promote textile diversity.
(3) The inability of jute to be biodegradable under standard tropical environmental conditions.
(4) The invention and widespread use of cheaper synthetic substitutes like nylon.
(5) Question not attempted

31. Which of the following is not a major oilseed crop grown in India?
(1) Groundnut
(2) Soybean
(3) Sesame
(4) Oats
(5) Question not attempted

32. Consider the following statements regarding horticulture in India:
I. India is the largest producer of fruits and vegetables in the world.
II. The National Horticulture Mission was launched to promote holistic growth of the horticulture sector.
III. Mango, banana, and citrus account for a major share of fruit production in India.
IV. Post-harvest losses remain a major challenge in this sector.
Which combination represents the incorrect statement(s)?
(1) II and III
(2) I only
(3) IV only
(4) I and IV
(5) Question not attempted

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33. Identify the correct statement regarding coffee cultivation in India.
(1) It is exclusively grown in the northeastern states of India.
(2) It was initially introduced on the Baba Budan Giri hills in Karnataka.
(3) Robusta is the only variety of coffee grown in India due to climate restrictions.
(4) Coffee plants require direct, intense sunlight with no shade trees for optimal yield.
(5) Question not attempted

34. Natural rubber is an equatorial crop, but under special conditions, it is also grown in tropical and sub-tropical areas. Which of the following precipitation regimes is strictly required for its commercial cultivation in India?
(1) Rainfall above 200 cm with a moist and humid climate.
(2) Rainfall less than 50 cm annually in semi-arid and arid regions.
(3) Rainfall evenly distributed between 50 cm and 100 cm during the year.
(4) Completely dry winters with high intensity monsoon-only rainfall patterns.
(5) Question not attempted

35. Which Indian state is famously known as the 'Spice Garden of India' due to its extensive production of black pepper, cardamom, and cinnamon?
(1) Andhra Pradesh
(2) Karnataka
(3) Kerala
(4) Assam
(5) Question not attempted

36. Match the state in List-I with its status in coffee production in List-II.
List I: (State)

55. (4) Jawahar Canal - Right bank canal of Nagarjunasagar
The Nagarjunasagar Dam project features two main canals for distributing water to its command area. The right bank canal is named the Jawahar Canal, while the left bank canal is named the Lal Bahadur Canal. These canals provide essential irrigation to millions of hectares across several districts in Andhra Pradesh and Telangana, supporting the intensive cultivation of crops like paddy.

56. (2) II and V only
Tank irrigation is a traditional, low-capital method rather than a massive investment project like a large dam. It is highly dependent on monsoons and suffers from siltation and evaporation. Furthermore, it is characteristic of the hilly and rocky Peninsular region, not the flat alluvial plains of Punjab, where tube wells and canals are the dominant irrigation methods used by farmers.

57. (3) Blocks where water extraction exceeds the annual rechargeable volume.
In the terminology used by the Central Ground Water Board, 'dark zones' refer to specific geographical areas or administrative blocks where the groundwater exploitation level is extremely high. Specifically, these are regions where the annual extraction of groundwater for various purposes exceeds the amount of water that is naturally or artificially recharged back into the aquifer system each year without depletion.

58. (1) A-iii, B-i, C-iv, D-ii
The Bhakra Dam is recognized as the highest straight gravity dam in India. The Hirakud Dam is the longest earthen dam in the country. The Sardar Sarovar Dam is the largest structure within the extensive Narmada Valley Project. The Nagarjunasagar Dam is a massive masonry structure built on the Krishna River, serving as a landmark project for the southern states.

59. (4) Encouraging privatization of all surface river networks.
India's National Water Policy focuses on equitable distribution, conservation, efficiency, and addressing climate change. While it may allow for private sector participation in specific service delivery components, it does not advocate for the complete privatization of surface river networks. Rivers are considered a public trust and a national resource that should be managed for the common good under government oversight.

60. (2) Punjab
The Rajasthan Feeder Canal is the initial segment of the Indira Gandhi Canal system. It starts at the Harike Barrage in Punjab and travels a significant distance through Punjab and Haryana before finally entering Rajasthan. The longest portion of this feeder canal lies within the state of Punjab, where it serves as a transit channel carrying water to the desert regions.

61. (1) B, A, C, D
Tamil Nadu has the highest total area under tank irrigation due to its traditional dependence on these structures in a rain-shadow region. Andhra Pradesh follows as another major state with extensive tank networks. Rajasthan has a significant number of tanks, particularly in its southern and eastern parts. Punjab, dominated by canals and tube wells, has the least reliance on tank irrigation.

62. (4) A rotational system for equitable distribution of canal water to farmers.
Warabandi is a traditional and highly organized water management system used in the canal command areas of states like Punjab, Haryana, and Rajasthan. It involves a predetermined weekly rotation schedule where each farmer is allocated a specific time slot to draw water from the canal. This ensures that all farmers, including those at the tail end, receive their fair share.

63. (1) Damodar Valley Corporation.
The Damodar Valley Corporation, established on July 7, 1948, was the first multipurpose river valley project initiated in independent India. It was created to tackle the devastating floods caused by the Damodar River and to provide irrigation and power to the states of West Bengal and Bihar (now Jharkhand). Its success paved the way for many other large-scale river projects.

64. (3) A is true but R is false
The Indian government provides substantial subsidies for micro-irrigation systems like drip and sprinklers to promote water efficiency in water-scarce areas. However, these systems do

46. (4) I, II and III
Khadin is a traditional and highly effective rainwater harvesting system used in the arid regions of Rajasthan, especially Jaisalmer. It involves building an earthen embankment across lower hill slopes to capture surface runoff from rocky catchments. The harvested water saturates the soil, allowing for successful agriculture in the desert environment while simultaneously recharging the local groundwater aquifers effectively.

47. (1) Ratio of water consumed by crops to water delivered at the canal head.
Irrigation efficiency is a crucial metric that measures how effectively water is used in an irrigation system. It is defined as the ratio between the volume of water actually consumed by the crops through evapotranspiration and the total volume of water diverted or delivered at the head of the canal. This helps identify losses due to seepage and evaporation.

48. (1) A-iii, B-iv, C-i, D-ii
The lift canals of the Indira Gandhi Canal Project were renamed to honor prominent figures. The Bikaner-Lunkaransar Lift Canal is now the Kanwar Sen Lift Canal. The Nohar-Sahwa became the Chaudhari Kumbharam Lift Canal. The Kolayat was renamed the Dr. Karni Singh Lift Canal, and the Phalodi Lift Canal is now known as the Guru Jambheshwar Lift Canal.

49. (3) B, A, D, E, C
According to India's National Water Policy, the allocation of water resources follows a specific hierarchy based on necessity. Drinking water is always the top priority. This is followed by ecological requirements to maintain river health. Irrigation is prioritized next to ensure food security, followed by hydropower generation. Industrial use, specifically agro-industries, typically occupies the lower end of the priority list.

50. (3) Both Statement I and Statement II are correct, and Statement II is a direct consequence of the activities described in Statement I.
The Indira Gandhi Canal has successfully transformed large parts of the Thar Desert into productive agricultural land. However, this intensive irrigation in an area with high evaporation and poor drainage has directly led to severe waterlogging problems, locally known as 'Sem'. Areas like Badopal are classic examples where the environmental consequence of rising water tables has negatively impacted the landscape.

51. (1) I, II and IV only
Rooftop rainwater harvesting is a common urban practice that helps reduce storm runoff and mitigate flooding. The Central Ground Water Board strongly advocates for these systems to recharge depleted aquifers in overexploited zones. However, RWH is not limited to surface storage; it often involves direct injection into the ground to replenish groundwater levels, making the third statement factually incorrect.

52. (4) Surface water uses rivers and canals, while groundwater uses subsurface wells.
The fundamental distinction between these two types of irrigation lies in their source and extraction method. Surface water irrigation involves utilizing water from rivers, lakes, or reservoirs through a network of open canals and channels. In contrast, groundwater irrigation involves extracting water stored in underground aquifers through the use of traditional wells, tube wells, or borewells equipped with mechanical pumps.

53. (1) Mahanadi, Godavari, Krishna, Narmada
Following the geography of India from the east coast towards the west, the Mahanadi River flows through Odisha in the east. Moving westward across the peninsula, one encounters the Godavari and then the Krishna River systems. Finally, the Narmada River is a major west-flowing river that drains into the Arabian Sea, placing it furthest west among the group of rivers mentioned.

54. (2) Its location in a highly active seismic zone in the Himalayas.
The Tehri Dam project faced significant opposition primarily because it is situated in the Central Himalayan Seismic Gap, a region highly prone to major earthquakes. Critics and geologists argued that a dam failure in such a sensitive area could cause catastrophic flooding in the densely populated downstream Gangetic plains. This safety concern remains a central theme in the ongoing debate.

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pasture development programs. These initiatives are essential to stabilize the shifting sand dunes of the Thar Desert, which otherwise threaten to bury the canal and agricultural fields. This biological approach to environmental management is vital for the long-term sustainability of the project.

74. (3) Both Statement I and Statement II are correct, and Statement II is the correct explanation of Statement I.
The National Water Policy advocates for water management based on the river basin approach because a basin is a natural hydrological unit where all water resources are interconnected. This scientific framework allows for the integrated and multi-sectoral planning of water use, ensuring that the needs of various stakeholders—such as agriculture, industry, and ecology—are balanced effectively within the entire catchment area.

75. (4) Immediate doubling of the total annual rainfall in the command area.
The Command Area Development programme improves irrigation efficiency, cropping intensity, and equitable water distribution while addressing drainage issues. However, it is an engineering and management program that has no direct influence on the regional climate or meteorological patterns. Therefore, claiming that it causes an immediate and massive increase in annual rainfall is factually incorrect and not an objective of the program.

76. (1) I, II, IV and V only
Multipurpose projects like Hirakud were designed to provide multiple benefits simultaneously, and were famously described as "Temples of Modern India" by Nehru. They often involve the inundation of forests and farm lands, causing social and environmental impacts. The claim that their environmental impact is "universally negligible" is incorrect, as these projects frequently face criticism for their significant ecological consequences.

77. (3) A geological formation capable of storing and yielding groundwater.
An aquifer is an underground layer of water-bearing permeable rock, rock fractures, or unconsolidated materials such as gravel, sand, or silt. These geological formations are essential because they act as natural reservoirs that can store vast quantities of water and yield it in usable amounts through wells or springs. They are the primary source of groundwater for agricultural and domestic use.

78. (1) A-ii, B-i, C-iv, D-iii
The Sirhind Canal is a major irrigation structure that draws water from the Sutlej River system. The Nagarjunasagar Right Canal is part of the Krishna River project. The Bargarh Canal is an important distribution channel within the Mahanadi River basin in Odisha. The Narmada Main Canal is the primary conduit for transporting water from the Sardar Sarovar Dam across the Narmada Valley.

79. (1) Mismatch between river and state boundaries and limited resources.
Most major rivers in India flow through multiple states, creating a complex situation where administrative boundaries do not align with natural hydrological units. As the demand for water grows for agriculture and industry, these limited resources become a source of contention. States often compete for a larger share of the water, leading to disputes over the allocation and control of the flow.

80. (2) Drip irrigation
Highly permeable sandy soils have extremely low water-holding capacity, meaning water drains away quickly before plants can use it. In such environments, traditional flooding or canal irrigation methods are highly inefficient due to massive losses from deep percolation. Drip irrigation is the most appropriate solution as it delivers water slowly and precisely to the root zone, ensuring maximum absorption and minimal wastage.

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13. A farmer in the Nilgiris wishes to cultivate a coffee variety that is highly demanded globally for its superior quality, despite it being susceptible to pests. Which variety of coffee was initially brought from Yemen and is widely produced in India matching this description?
(1) Robusta
(2) Liberica
(3) Arabica
(4) Excelsa
(5) Question not attempted

14. Arrange the following states in decreasing order of their natural rubber production in India:
A. Kerala
B. Tamil Nadu
C. Karnataka
D. Tripura
Select the correct order from the options below:
(1) A, B, D, C
(2) A, D, C, B
(3) A, D, B, C
(4) A, C, B, D
(5) Question not attempted

15. Which of the following statements is true regarding spice production in India?
(1) Cardamom hills in South India are famous for producing green cardamom.
(2) Black pepper is primarily cultivated in the arid deserts of northern Rajasthan.
(3) Turmeric requires freezing temperatures and alpine soil for root development.
(4) India holds a complete global monopoly over the total production of saffron.
(5) Question not attempted

16. Match the horticulture crop in List-I with its prominent producing state/region in List-II.
List I: (Horticulture Crop)
A. Apples
B. Mangoes
C. Litchi
D. Grapes
List II: (Region)
i. Maharashtra
ii. Himachal Pradesh
iii. Uttar Pradesh
iv. Bihar
(1) A-ii, B-iv, C-iii, D-i
(2) A-ii, B-iii, C-iv, D-i
(3) A-i, B-iii, C-iv, D-ii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

17. Floriculture has emerged as a high-growth agricultural sector in India. Which of the following best defines floriculture in a commercial context?
(1) The cultivation of fruit-bearing trees in controlled environments for food security.
(2) The cultivation of flowering and ornamental plants for direct sale or industrial use.
(3) The scientific process of enhancing the nutrient value of cereal crops through grafting.
(4) The traditional practice of rotating crops with leguminous flowers for soil health.
(5) Question not attempted

18. Consider the following statements about organic farming in India:
I. Sikkim is the first fully organic state in India.
II. Organic farming strictly prohibits the use of synthetic fertilizers and pesticides.
III. It relies heavily on crop rotation, green manure, and biological pest control.
IV. Yields in organic farming always surpass conventional farming yields in the very first year of transition.
V. The Paramparagat Krishi Vikas Yojana promotes organic farming in India.
Which combination of statements is correct?
(1) I, II, III and V
(2) I, II, IV and V
(3) II, III, IV and V
(4) I, III, IV and V
(5) Question not attempted

19. Which classification system is primarily utilized in India to divide the country into 15 distinct agricultural zones based on soil type, temperature, and rainfall for optimal crop planning?
(1) Koeppen's Climate Classification
(2) ICAR Soil Classification
(3) Planning Commission's Agro-Climatic Zones
(4) National Bureau of Soil Survey Regions
(5) Question not attempted

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D. Moong
List II: (Cropping Season)
i. Primarily Rabi
ii. Primarily Kharif
iii. Grown in both seasons but mostly Kharif
iv. Grown predominantly as Zaid and Kharif
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

7. Coarse cereals like Jowar, Bajra, and Ragi are highly significant in Indian agriculture. Which of the following is the primary reason for their extensive cultivation in arid and semi-arid regions?
(1) They require highly fertile alluvial soils which are found in deserts.
(2) They command the highest export value among all cereal crops.
(3) They require continuous waterlogging, making them suitable for flash-flood zones.
(4) They are highly resilient to drought conditions and require minimal irrigation.
(5) Question not attempted

8. Consider the following statements regarding sugarcane cultivation in India:
I. It requires a hot and humid climate with a temperature of 21 to 27 degrees Celsius.
II. It can only be grown in the highly saline soils of coastal regions.
III. Uttar Pradesh and Maharashtra are among the leading producing states.
Which combination of the above statements is correct?
(1) I and III
(2) I and II
(3) II and III
(4) I, II and III
(5) Question not attempted

9. Given below are two statements regarding cotton cultivation in India. Read the statements and choose the correct option.
Statement I: Cotton cultivation in India is heavily concentrated in the Deccan Plateau region.
Statement II: The regur or black soil of the Deccan Plateau retains moisture, which is highly beneficial for the deep-rooted cotton crop.
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

10. Which of the following conditions is an exception to the geographical requirements for the cultivation of Jute in India?
(1) Frost-free days and low humidity throughout the growing season.
(2) Well-drained fertile soils of the floodplains that are renewed annually by silting.
(3) High temperature during the time of growth to ensure rapid maturity of the fiber.
(4) Abundant supply of fresh water for retting and washing the fiber after harvest.
(5) Question not attempted

11. Identify the incorrectly matched pair of oilseed and its primary producing state.
(1) Groundnut - Gujarat
(2) Mustard - Rajasthan
(3) Soybean - Madhya Pradesh
(4) Sunflower - Assam
(5) Question not attempted

12. Consider the following statements regarding Tea plantations in India:
I. Tea requires a warm and moist frost-free climate throughout the year.
II. Frequent showers evenly distributed over the year ensure continuous growth of tender leaves.
III. Assam and West Bengal are the major tea-producing states in northern India.
IV. Tea bushes grow best in highly alkaline and waterlogged soils.
Which combination represents the correct statements?
(1) II, III and IV
(2) I, II and III
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

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not "completely eliminate" the dependency on groundwater. They only reduce the volume of water required per crop. Farmers often still rely on groundwater as their primary source of water to feed these efficient irrigation networks.

65. (2) Hampi (Hosapete)
The Tungabhadra Dam, a significant masonry structure, is built across the Tungabhadra River near the town of Hosapete in Karnataka. This location is very close to the UNESCO World Heritage site of Hampi, which was the capital of the historical Vijayanagara Empire. The project serves the dual purpose of providing irrigation to local agricultural lands and generating hydroelectric power.

66. (4) I, II and III
Rajasthan has a rich history of traditional water harvesting. Tankas are underground storage tanks for collecting rooftop rainwater. Bawaris or stepwells are ancient structures designed for community water access and storage. Nadis are small village ponds used to collect surface runoff. All three are integral components of the state's traditional water management system, especially in the arid and semi-arid regions.

67. (3) River Tungabhadra
The Cauvery Water Dispute primarily involves the main Cauvery River and its tributaries such as the Hemavati, Kabini, and Arkavathy. These rivers are part of the Cauvery basin shared by Karnataka, Tamil Nadu, Kerala, and Puducherry. The Tungabhadra River, however, is a major tributary of the Krishna River and is involved in separate water-sharing agreements and disputes, primarily between Karnataka and Andhra Pradesh.

68. (1) A-i, B-ii, C-iii, D-iv
Within the Damodar Valley Corporation, the Tilaiya and Maithon dams are both situated on the Barakar River, a major tributary of the Damodar. The Panchet Dam is built directly across the main Damodar River itself. The Konar Dam is constructed on the Konar River, which is another tributary. These dams work in coordination to provide flood control, irrigation, and hydroelectric power.

69. (3) Waterlogging and rising water tables due to intense canal irrigation.
The term 'Sem' refers to the ecological degradation caused by rising groundwater levels in the canal command areas of northwestern Rajasthan. When large volumes of irrigation water are applied to land with poor natural drainage, the excess water seeps into the ground. This eventually causes the water table to rise to the surface, creating swampy, waterlogged conditions that make the soil unfit for cultivation.

70. (2) Environmental concerns and displacement of tribal communities.
The Narmada Bachao Andolan was a prominent social and environmental movement that challenged the Sardar Sarovar Dam project. Its primary focus was the large-scale displacement of thousands of tribal families and local communities whose lands were to be submerged. The movement also highlighted the potential loss of vast forest areas and the overall environmental impact of constructing such a massive dam.

71. (2) III and IV only
While Uttar Pradesh and Punjab are correctly identified for their high irrigated areas, the third and fourth statements are incorrect. Mizoram, a hilly state, relies more on rainfed and Jhum cultivation rather than dense canal networks. Additionally, well irrigation is a major source of water in Gujarat, especially in the Saurashtra and northern regions, making the claim of its total absence false.

72. (1) Encroachment of tank beds, siltation, and poor maintenance.
The effectiveness of traditional tank irrigation in Peninsular India has significantly declined due to several man-made factors. Extensive siltation has reduced the storage capacity of many tanks over centuries. Furthermore, the encroachment of tank beds for residential or commercial purposes and the general lack of regular maintenance by community or government bodies have rendered many of these ancient systems dysfunctional.

73. (3) Its command area development includes extensive afforestation to stabilize sand dunes.
A critical component of the Indira Gandhi Canal's command area development is the implementation of massive afforestation and

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20. Among the various challenges faced by Indian agriculture, which of the following is considered the most critical structural bottleneck hindering modernization and mechanization?
(1) Lack of export subsidies
(2) Over-reliance on organic manure
(3) Shortage of agricultural universities
(4) Fragmentation of landholdings
(5) Question not attempted

21. Read the following statements regarding the importance of agriculture in the Indian economy and identify the incorrect statement.
(1) Agriculture provides essential raw materials to major industries such as textiles and sugar.
(2) A significant portion of the rural population depends on allied activities for survival.
(3) Agriculture is the largest contributor to India's GDP in the current decade.
(4) Agricultural products constitute a vital part of India's total exports to the market.
(5) Question not attempted

22. Select the correct chronological sequence of the Indian cropping seasons starting from the onset of the monsoon.
(1) Rabi, Zaid, Kharif
(2) Kharif, Rabi, Zaid
(3) Zaid, Kharif, Rabi
(4) Kharif, Zaid, Rabi
(5) Question not attempted

23. Aman, Aus, and Boro are well-known terms associated with the cultivation of which crop, particularly in West Bengal and Assam?
(1) Tea
(2) Jute
(3) Sugarcane
(4) Rice
(5) Question not attempted

24. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.
Assertion (A): West Bengal is the undisputed leader in the production of jute in India.
Reason (R): The state provides an ideal environment with hot and humid climate, abundant rainfall, and stagnant water required for the retting process.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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25. Which of the following uses of Maize in India is correctly paired with its industrial application?
(1) Corn syrup - Production of Portland cement
(2) Maize husks - Primary raw material for steel smelting
(3) Corn starch - Textile and paper industry sizing
(4) Corn oil - Lubricant in heavy machinery
(5) Question not attempted

26. Match the crop in List-I with its primary cropping season in North India in List-II.
List I: (Crop)
A. Mustard
B. Watermelon
C. Paddy
D. Barley
List II: (Cropping Season)
i. Kharif
ii. Rabi
iii. Zaid
(1) A-ii, B-iii, C-i, D-ii
(2) A-i, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iii, D-ii
(4) A-iii, B-ii, C-i, D-ii
(5) Question not attempted

27. Ragi is a coarse cereal of tremendous nutritional value. It is particularly rich in which of the following minerals, making it highly beneficial for combating anemia?
(1) Zinc and Magnesium
(2) Potassium and Sodium
(3) Copper and Selenium
(4) Calcium and Iron
(5) Question not attempted

28. Consider the following statements regarding Mustard cultivation, an important oilseed in India:
I. It is predominantly a Kharif crop grown heavily in southern India.
II. Rajasthan is one of the leading producers of

CHAPTER 12

Agriculture : Food, Commercial and Plantation Crops

1. Which of the following represents the most appropriate description of the role of agriculture in the Indian economy?
(1) It contributes to more than half of India's Gross Domestic Product and remains the primary driver of growth.
(2) It employs the largest segment of the workforce despite its declining share in Gross Domestic Product.
(3) It is solely responsible for generating all foreign exchange reserves through its international exports.
(4) It has seen an exponential increase in total workforce participation across all states over the last decade.
(5) Question not attempted

2. Which of the following statements correctly differentiates between the Kharif and Rabi cropping seasons in India?
(1) Kharif crops rely on the southwest monsoon, while Rabi crops are sown at the beginning of winter.
(2) Kharif crops are sown in winter and harvested in summer, whereas Rabi crops are sown in the monsoon.
(3) Zaid is a short season between Rabi and Kharif during which primarily oilseeds and pulses are grown.
(4) Wheat and gram are the most important Kharif crops grown in the northern and western parts of India.
(5) Question not attempted

3. Which of the following states is not traditionally considered a major rice-producing state but has seen increased production due to the expansion of irrigation networks?
(1) West Bengal
(2) Andhra Pradesh
(3) Punjab
(4) Odisha
(5) Question not attempted

4. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.
Assertion (A): The Green Revolution in India disproportionately benefited wheat production over other crops.
Reason (R): High Yielding Variety seeds introduced during the Green Revolution were primarily successful in wheat in the irrigated regions of Punjab and Haryana.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

5. Maize in India is used both as food and fodder. Which of the following temperature and soil conditions are most ideal for maize cultivation?
(1) Temperature between 10 degrees Celsius and 15 degrees Celsius in black soil
(2) Temperature between 30 degrees Celsius and 35 degrees Celsius in laterite soil
(3) Temperature between 21 degrees Celsius and 27 degrees Celsius in old alluvial soil
(4) Temperature below 15 degrees Celsius in red loamy soil
(5) Question not attempted

6. Match the following types of pulses in List-I with their predominant cropping season in List-II.
List I: (Types of Pulses)
A. Tur (Arhar)
B. Gram
C. Urad

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A. Karnataka
B. Kerala
C. Tamil Nadu
D. Andhra Pradesh

List II: (Status)

i. Non-traditional area with expanding plantations
ii. Second largest producer in India
iii. Accounts for over 70% of India's total production
iv. Third largest producer, mainly in the Nilgiris

(1) A-ii, B-iii, C-i, D-iv
(2) A-iii, B-iv, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-ii, C-iv, D-i
(5) Question not attempted

37. Which of the following states is generally an exception and not considered among the top traditional hubs for commercial floriculture in India?
(1) Karnataka
(2) Tamil Nadu
(3) Jharkhand
(4) Maharashtra
(5) Question not attempted

38. Consider the following statements regarding the challenges faced by Indian agriculture:

I. The average size of operational landholdings has been steadily increasing.
II. Depletion of groundwater tables severely impacts sustainable irrigation.
III. A lack of cold storage facilities leads to high post-harvest losses.
IV. Access to formal credit remains difficult for small and marginal farmers.
V. The APMC act universally guarantees maximum retail price to all farmers directly.

Which combination represents the incorrect statement(s)?
(1) II, III and IV
(2) I and V
(3) I, IV and V
(4) III and V
(5) Question not attempted

39. Identify the correctly matched pair regarding India's agro-climatic zones and their prominent features.
(1) Western Dry Region: High annual rainfall and prevalence of laterite soils.
(2) Trans-Gangetic Plains Region: Highly arid, non-irrigated desert lands across the zone.
(3) Lower Gangetic Plains Region: Semi-arid climate with wheat grown as the sole crop.
(4) Eastern Himalayan Region: High rainfall, dense forest, and shifting cultivation.
(5) Question not attempted

40. Wheat is the second most important cereal crop in India. Which state is the leading producer of wheat in terms of total volume?
(1) Uttar Pradesh
(2) Punjab
(3) Haryana
(4) Madhya Pradesh
(5) Question not attempted

41. Disguised unemployment is a major feature of the Indian agricultural sector. What is the primary cause of this phenomenon?
(1) The rapid integration of advanced robotic farming machinery across rural provinces.
(2) The total shift of agricultural laborers to the manufacturing sector for better wages.
(3) More people engaged in work on a piece of land than are actually required.
(4) The strict prohibition of employing seasonal labor by the central and state governments.
(5) Question not attempted

42. Which of the following crops is not typically cultivated during the Zaid season in India?
(1) Mustard
(2) Watermelon
(3) Muskmelon
(4) Cucumber
(5) Question not attempted

43. Rice requires specific climatic conditions for optimum growth. Which of the following best describes its requirements?
(1) Moderate temperature (15-20°C) and annual rainfall between 50-75 cm for growth.
(2) High temperature with minimal rainfall and dry winds during the entire cropping cycle.
(3) Cold climate with frequent snowfall and low humidity throughout the maturation stage.
(4) High temperature (above 25°C), high humidity, and rainfall above 100 cm.

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IV. Heavy rainfall during the ball-bursting stage is highly beneficial for the crop.

Which combination represents the correct statements?

(1) I, II and III
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

73. A farmer transitions from conventional to organic farming. In the first three years, the farmer notices a dip in the crop yield but premium pricing in the market. What economic term best describes the certification phase where the land recovers from chemical residues before being officially certified as organic?

(1) Maturity phase
(2) Fallow period
(3) Conversion period
(4) Harvesting lag
(5) Question not attempted

74. The 'Middle Gangetic Plain Region' primarily encompasses the agricultural zones of which two major Indian states known for high population density and intensive subsistence farming?

(1) Uttar Pradesh and Bihar
(2) Punjab and Haryana
(3) Gujarat and Rajasthan
(4) Tamil Nadu and Kerala
(5) Question not attempted

75. Several challenges plague Indian agriculture. Which of the following is an institutional challenge rather than a technological or environmental one?

(1) Depletion of groundwater tables
(2) Lack of access to high-yielding variety seeds
(3) High incidence of pest attacks
(4) Fragmentation of landholdings
(5) Question not attempted

76. Match the vegetable crop in List-I with its significant producing state in List-II.

List I: (Vegetable Crop)

A. Onion
B. Potato
C. Tomato
D. Tapioca (Cassava)

List II: (State)

i. Uttar Pradesh
ii. Maharashtra
iii. Kerala
iv. Andhra Pradesh

(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

NODIA

77. Which of the following conditions is not suitable for the cultivation of maize?

(1) Deep, well-drained, fertile loamy soil that provides sufficient nutrition.
(2) Plentiful sunshine during the growing season to aid photosynthetic processes.
(3) Continuous heavy rainfall leading to waterlogging.
(4) Temperature range of 21 to 27 degrees Celsius for optimal metabolic growth.
(5) Question not attempted

78. Consider the following statements regarding natural rubber cultivation in India:

I. It requires rainfall of more than 200 cm.
II. It requires a temperature above 25 degrees Celsius.
III. Kerala is the largest producer of natural rubber in India.
IV. Rubber is basically an equatorial crop.
V. It is extensively grown in the arid zones of western Rajasthan.

Which combination represents the incorrect statement(s)?

(1) V only
(2) IV and V
(3) I, II and III
(4) I and V
(5) Question not attempted

79. Given below are two statements regarding pulse cultivation in India. Read the statements and choose the correct option.

Statement I: Cultivation of pulses like gram and tur is heavily concentrated in the rainfed regions of peninsular and central India.

Statement II: Pulses require less moisture and can survive in dry conditions better than water-intensive crops like rice and sugarcane.

(1) Both Statement I and Statement II are correct and Statement II explains Statement

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(3) Frost-free days required - 210 days
(4) Major producing state in North - Punjab
(5) Question not attempted

51. Which of the following river basins in India is the most globally recognized hub for the cultivation of Jute, also known as the golden fibre?
(1) Godavari basin
(2) Narmada basin
(3) Hooghly basin
(4) Cauvery basin
(5) Question not attempted

52. Consider the following statements regarding Rice cultivation:
I. India is the largest producer of rice in the world.
II. It is a Kharif crop requiring high humidity.
III. Punjab and Haryana grow rice primarily using canal irrigation and tubewells.
IV. Direct Seeded Rice (DSR) is a technique used to save water in paddy cultivation.
Which combination represents the correct statements?
(1) I, II and III
(2) I, III and IV
(3) I, II and IV
(4) II, III and IV
(5) Question not attempted

53. Given below are two statements regarding agricultural production in India. Read the statements and choose the correct option.
Statement I: Groundnut is a Kharif crop and accounts for about half of the major oilseeds produced in the country.
Statement II: Gujarat is consistently one of the largest producing states of groundnut in India.
(1) Both Statement I and Statement II are correct and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

54. Arrange the following states in the correct descending order of their total rice production:
A. West Bengal
B. Uttar Pradesh
C. Punjab
D. Rajasthan
Select the correct order:
(1) A, B, C, D
(2) B, A, C, D
(3) A, C, B, D
(4) C, A, B, D
(5) Question not attempted

55. The tea plant grows well in tropical and sub-tropical climates. Which soil characteristic is essential for tea plantations to thrive?
(1) Deep, fertile, well-drained soil rich in humus and organic matter.
(2) Shallow, rocky soil with high salinity and low moisture retention capacity.
(3) Waterlogged alluvial soil that retains moisture permanently throughout the growing year.
(4) Sandy desert soil with minimal organic content and high surface temperatures.
(5) Question not attempted

56. Match the coarse cereal in List-I with its primary producing state in List-II.
List I: (Coarse Cereal)
A. Jowar
B. Bajra
C. Ragi
D. Barley
List II: (State)
i. Rajasthan
ii. Maharashtra
iii. Karnataka
iv. Uttar Pradesh
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iii, D-iv
(3) A-iii, B-i, C-ii, D-iv
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

57. Indian coffee is highly sought after in international markets. What is the primary historical reason for its initial global reputation?
(1) The exclusive cultivation of the high-yielding Robusta variety for mass export.
(2) The complete mechanization of coffee

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ANSWERS

1. (2) It employs the largest segment of the workforce despite its declining share in Gross Domestic Product.
Agriculture is a cornerstone of the Indian economy, employing approximately half of the nation's total workforce. While its percentage contribution to the Gross Domestic Product has consistently decreased over the decades due to the rapid growth of industrial and service sectors, it remains the primary source of livelihood for millions of people in various rural areas.

2. (1) Kharif crops rely on the southwest monsoon, while Rabi crops are sown at the beginning of winter.
Cropping patterns in India are largely determined by climatic variations and monsoon cycles. Kharif crops are sown at the beginning of the southwest monsoon season, typically in June or July, and harvested in autumn. In contrast, Rabi crops are sown at the start of winter, around October or November, and harvested during the spring months.

3. (3) Punjab
Traditionally, rice is a crop of high rainfall areas like West Bengal and Odisha. However, with the expansion of extensive canal and tubewell irrigation networks during the Green Revolution, states like Punjab and Haryana have emerged as major rice producers. This technological shift enabled rice cultivation in regions that do not naturally receive sufficient monsoon rainfall annually.

4. (1) Both A and R are true and R is the correct explanation of A.
The Green Revolution significantly transformed Indian agriculture by introducing high-yielding variety seeds specifically developed for wheat. This scientific advancement was most successful in northern states like Punjab and Haryana because these regions possessed well-established irrigation systems. Consequently, wheat production grew at a much faster rate compared to other food grains, creating a noticeable disparity in growth.

5. (3) Temperature between 21 degrees Celsius and 27 degrees Celsius in old alluvial soil
Maize is a versatile cereal crop utilized as both food for humans and fodder for livestock. It thrives best in geographical conditions featuring temperatures ranging between twenty-one and twenty-seven degrees Celsius. Additionally, the presence of old alluvial soil is ideal for its growth, providing the necessary nutrients and drainage required for a healthy and high-yield harvest.

6. (2) A-ii, B-i, C-iii, D-iv
India produces various pulses across different agricultural seasons to maintain soil fertility. Tur, also known as Arhar, is primarily a Kharif crop with a long maturation period. Gram is a major Rabi crop grown during the winter. Urad is mostly cultivated in the Kharif season, while Moong is versatile, being grown during both the Zaid and Kharif.

7. (4) They are highly resilient to drought conditions and require minimal irrigation.
Coarse cereals like Jowar, Bajra, and Ragi are highly valued for their exceptional nutritional content and hardiness. These crops are extensively cultivated in arid and semi-arid regions because they possess high resilience to drought conditions. Their ability to grow in areas with low rainfall and minimal irrigation makes them essential for food security in water-stressed geographic zones.

8. (1) I and III
Sugarcane is a long-duration crop that requires a hot and humid climate to thrive optimally. It grows best in temperatures between twenty-one and twenty-seven degrees Celsius with ample rainfall. Geographically, Uttar Pradesh is the leading producer in the north, while Maharashtra is a major producer in the south, benefiting from higher sucrose levels found in tropical regions.

9. (1) Both Statement I and Statement II are correct and Statement II explains Statement I.
Cotton cultivation is heavily concentrated in the Deccan Plateau due to the unique properties of

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65. Identify the incorrectly matched pair of Agro-Climatic Zone and its corresponding state/ region.
(1) Western Dry Region - Rajasthan
(2) Central Plateau and Hills Region - Kerala
(3) Island Region - Andaman & Nicobar and Lakshadweep
(4) Upper Gangetic Plains - Uttar Pradesh
(5) Question not attempted

66. Match the tea-producing region in List-I with its prominent geographical characteristic in List-II.
List I: (Tea-producing Region)
A. Brahmaputra Valley
B. Darjeeling
C. Nilgiris
D. Kangra Valley
List II: (Geographical Characteristic)
i. High altitude slopes in West Bengal famous for GI-tagged orthodox tea
ii. Largest contiguous tea-growing region in Assam
iii. Southern Indian hill ranges producing distinctive fragrant tea
iv. Hilly region in Himachal Pradesh with minor but famous tea estates
(1) A-ii, B-i, C-iii, D-iv
(2) A-i, B-ii, C-iv, D-iii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iii, B-i, C-ii, D-iv
(5) Question not attempted

67. Agricultural marketing in India suffers from various inefficiencies. Which of the following government initiatives is considered the most comprehensive step towards creating a unified national market for agricultural commodities?
(1) Kisan Credit Card scheme
(2) Pradhan Mantri Fasal Bima Yojana
(3) e-NAM (National Agriculture Market)
(4) Soil Health Card Scheme
(5) Question not attempted

68. Consider the following statements regarding the global significance of India's pulse production:
I. India is the largest producer of pulses in the world.
II. India is the largest consumer of pulses in the world.
III. India strictly exports all its pulses and prohibits domestic consumption.
Which combination represents the correct statements?
(1) II and III
(2) I and III
(3) I, II and III
(4) I and II
(5) Question not attempted

69. During the winter months, light rainfall brought by western cyclonic disturbances helps the wheat crop in northwest India. What is the primary cause of these disturbances?
(1) The retreating monsoon winds from the Bay of Bengal during the winter.
(2) Localized convective thunderstorms known as Kalbaishakhi in the eastern regions.
(3) Shallow cyclonic depressions originating over the Mediterranean Sea.
(4) Intense heating of the Tibetan Plateau causing pressure changes in the north.
(5) Question not attempted

70. Which country holds the position as the largest producer of sugarcane in the world, closely followed by India in the second position?
(1) China
(2) Brazil
(3) Cuba
(4) Australia
(5) Question not attempted

71. Which of the following statements correctly describes Soybean cultivation in India?
(1) It is exclusively grown in the coastal plains of Odisha and West Bengal.
(2) It requires extremely sandy soil and a harsh desert climate for development.
(3) It is primarily grown as a Zaid crop during the peak summer months of May.
(4) Madhya Pradesh and Maharashtra are the leading soybean producers.
(5) Question not attempted

72. Consider the following statements regarding cotton production:
I. India is believed to be the original home of the cotton plant.
II. It requires 210 frost-free days and bright sunshine for its growth.
III. It is a Kharif crop and requires 6 to 8 months to mature.

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Sikkim was the first Indian state to become fully organic. The government supports this transition through schemes like Paramparagat Krishi Vikas Yojana for sustainability.

19. (3) Planning Commission's Agro-Climatic Zones
To optimize agricultural planning and resource allocation, the Indian Planning Commission divided the country into fifteen distinct agro-climatic zones. This classification is based on specific physical characteristics, including soil type, temperature variations, and rainfall patterns. These zones help in developing regional strategies for crop selection, irrigation management, and overall agricultural development tailored to the unique environmental constraints of areas.

20. (4) Fragmentation of landholdings
The fragmentation of landholdings is a critical structural challenge in Indian agriculture. As land is divided among heirs over successive generations, the average size of operational farms decreases. Small and scattered plots make it difficult and economically unviable for farmers to adopt modern machinery, advanced irrigation techniques, or large-scale mechanization, thereby hindering overall productivity and modernization of the sector.

21. (3) Agriculture is the largest contributor to India's GDP in the current decade.
While agriculture is vital for food security and provides raw materials for major industries like textiles and sugar, it is no longer the largest contributor to India's GDP. Over the past several decades, the service sector has overtaken agriculture in terms of economic value. However, agriculture remains the largest employer, with a significant portion of the population depending on it.

22. (2) Kharif, Rabi, Zaid
The Indian agricultural calendar follows a specific chronological sequence tied to the monsoon cycle. The Kharif season begins with the onset of the southwest monsoon in June. It is followed by the Rabi season, which starts during the winter months of October and November. Finally, the Zaid season occurs during the short summer gap between the Rabi harvest and Kharif.

23. (4) Rice
In regions with high rainfall and suitable temperatures like West Bengal and Assam, three distinct crops of paddy are grown in a single year. These are locally known as Aus, Aman, and Boro. This intensive cultivation is possible due to the favorable agro-climatic conditions and the availability of water, allowing farmers to harvest rice across different seasons for security.

24. (1) Both A and R are true and R is the correct explanation of A.
West Bengal is the leading producer of jute in India due to its ideal geographical location. The state possesses fertile alluvial soils in the Hooghly basin, which are renewed annually by floods. Furthermore, the hot and humid climate, combined with high rainfall and an abundant supply of stagnant water, provides the perfect environment for the essential retting process used.

25. (3) Corn starch - Textile and paper industry sizing
Maize is an industrially significant crop beyond its use as food and fodder. Corn starch, derived from maize, is extensively used in the textile and paper industries for sizing purposes. This process strengthens yarns and improves the surface quality of paper. Other derivatives, like corn oil and syrup, also find applications in food processing, but starch remains primary.

26. (1) A-ii, B-iii, C-i, D-ii
Cropping seasons in North India are clearly defined by weather patterns. Paddy is the primary Kharif crop, sown during the monsoon. Mustard and Barley are important Rabi crops, grown in the cool winter season and harvested in spring. Watermelon is a typical Zaid crop, cultivated during the short summer months when the weather is hot and dry before monsoon.

27. (4) Calcium and Iron
Ragi is a highly nutritious coarse cereal often referred to as a "superfood" in Indian agriculture. It is exceptionally rich in essential minerals, particularly calcium and iron. Its high iron content makes it a crucial dietary component for combating anemia, especially among rural populations. Additionally, ragi contains significant amounts of fiber and other micro-nutrients, making it an excellent crop.

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I.

(2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.

(3) Statement I is correct but Statement II is incorrect.

(4) Statement I is incorrect but Statement II is correct.

(5) Question not attempted

80. Over-irrigation in states like Punjab and Haryana has led to severe environmental degradation. Which of the following is a direct consequence of this practice on the soil?

(1) Extreme increase in the organic humus and nutrient content of the topsoil.

(2) Soil salinization and alkalinization of the land due to excessive watering.

(3) Complete transformation of fertile alluvial soil into acidic laterite soil.

(4) Drastic reduction in the overall bulk density and porosity of the topsoil.

(5) Question not attempted

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(5) Question not attempted

44. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.
Assertion (A): The share of agriculture in India's GDP has declined over the decades since independence.
Reason (R): The agricultural sector has experienced negative growth rates consistently, while industry and services have remained stagnant.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

45. Which of the following statements correctly highlights a unique feature of Maize cultivation in India compared to other cereals?
(1) It is a leguminous crop that enriches soil nitrogen through natural fixation.
(2) It requires stagnant water up to 10 cm during its entire vegetative growth cycle.
(3) It is a Kharif crop grown in the Rabi season in states like Bihar.
(4) It is the only cereal crop that is completely immune to all known pests.
(5) Question not attempted

46. Match the coarse cereal/maize characteristic in List-I with its description in List-II.
List I: (Crop)
A. Maize
B. Jowar
C. Bajra
D. Ragi
List II: (Description)
i. Requires sandy soils and shallow black soil, majorly grown in Rajasthan
ii. Grown in regions of red, black, sandy, loamy, and shallow black soils
iii. Rain-fed crop mostly grown in moist areas, third most important food crop
iv. Used both as food and fodder, requires temperature between 21 to 27 degrees Celsius
(1) A-i, B-ii, C-iii, D-iv
(2) A-iv, B-i, C-ii, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-iv, B-iii, C-i, D-ii
(5) Question not attempted

47. Farmers in a semi-arid region are advised to include pulses in their crop rotation cycle. What is the primary agronomic benefit of this practice, excluding Arhar (Tur)?
(1) They fix nitrogen from the air, thereby restoring soil fertility.
(2) They consume excess groundwater to prevent seasonal waterlogging in the fields.
(3) They release toxins that naturally eliminate all weeds in the surrounding area.
(4) They provide dense shade which lowers the local atmospheric temperature significantly.
(5) Question not attempted

48. Consider the following statements regarding the agricultural regions of India:
I. The Western Dry Region primarily covers the state of Rajasthan and is characterized by low rainfall.
II. The West Coast Plains and Ghats region is known for plantation crops like rubber, coffee, and spices.
III. The Island Region encompasses only the Lakshadweep islands, focusing entirely on apple orchards.
Which combination of the statements is correct?
(1) I and II
(2) II and III
(3) I and III
(4) I, II and III
(5) Question not attempted

49. Which of the following states is not considered a primary producer of sugarcane in the tropical belt of South India, known for higher sucrose content?
(1) Maharashtra
(2) Punjab
(3) Karnataka
(4) Tamil Nadu
(5) Question not attempted

50. Identify the incorrectly matched pair concerning cotton cultivation.
(1) Season - Rabi
(2) Black cotton soil - Regur

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the local soil. The region is covered with regur or black soil, which is famous for its excellent moisture retention capacity. This characteristic is vital for cotton, which is a deep-rooted crop requiring consistent moisture levels during its long maturation period annually.

10. (1) Frost-free days and low humidity throughout the growing season.
Jute, known as the golden fiber, requires very specific environmental conditions for optimal growth. It flourishes in the hot and humid climates found in the floodplains of eastern India. While well-drained fertile soils and high temperatures are essential, low humidity is actually detrimental to its development. The crop specifically needs high humidity and abundant fresh water supplies.

11. (4) Sunflower - Assam
Oilseed production is distributed across various Indian states based on soil and climate. Groundnut is majorly produced in Gujarat, while Rajasthan leads in mustard production and Madhya Pradesh is the top producer of soybean. Sunflower is primarily cultivated in southern and western states like Karnataka and Maharashtra, rather than in northeastern states like Assam, which lack suitable dry conditions.

12. (2) I, II and III
Tea is an important beverage crop that requires a warm and moist frost-free climate throughout the year. Frequent showers evenly distributed across all seasons are necessary to ensure the continuous growth of tender leaves. While Assam and West Bengal are the primary producers, tea actually requires well-drained, deep fertile soil and cannot survive in waterlogged or alkaline environments.

13. (3) Arabica
The Arabica variety of coffee is world-renowned for its superior quality and sweet flavor profile. Initially brought to India from Yemen, it was first planted in the Baba Budan Giri hills of Karnataka. Although it is more susceptible to pests than other varieties, Indian Arabica remains in high demand globally, contributing significantly to the country's status in exports.

14. (2) A, D, C, B
Natural rubber production in India is concentrated in specific tropical and equatorial regions. Kerala remains the undisputed leader, accounting for the vast majority of the nation's total output. In recent years, Tripura has emerged as the second-largest producer, followed by Karnataka and Tamil Nadu. This geographic distribution is driven by the need for high temperatures and heavy rainfall.

15. (1) Cardamom hills in South India are famous for producing green cardamom.
India is a global leader in spice production, particularly in the southern regions. The Cardamom Hills, located in the Western Ghats of Kerala and Tamil Nadu, are world-famous for producing high-quality green cardamom. Unlike other crops mentioned, spices like black pepper and turmeric require tropical climates with high rainfall and humidity rather than arid deserts or freezing alpine temperatures.

16. (2) A-ii, B-iii, C-iv, D-i
Horticulture crops are grown across diverse climatic zones in India. Apples are a major product of the temperate climate in Himachal Pradesh. Mangoes are widely cultivated in the plains of Uttar Pradesh, while Bihar is specifically famous for its high-quality litchi production. Grapes are prominently grown in the warmer, semi-arid regions of Maharashtra, particularly around Nashik district.

17. (2) The cultivation of flowering and ornamental plants for direct sale or industrial use.
Floriculture is a specialized branch of horticulture focused on the cultivation of flowering and ornamental plants for commercial purposes. This sector includes the production of cut flowers, seeds, and bulbs, as well as plants intended for landscaping or industrial perfume extraction. It has become a high-growth agricultural sector in India, driven by increasing domestic demand and export potential.

18. (1) I, II, III and V
Organic farming is a sustainable agricultural system that avoids synthetic inputs like chemical fertilizers and pesticides. It relies on natural processes such as crop rotation, green manure, and biological pest control to maintain soil health.

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harvesting which reduced its price significantly.
(3) The introduction of the high-quality sweet Arabica variety from Yemen.
(4) The geographical indication tag for coffee grown in the arid Thar desert region.
(5) Question not attempted

58. Consider the following statements regarding wheat cultivation in India:
I. It requires a cool growing season.
II. It requires bright sunshine at the time of ripening.
III. It requires 50 to 75 cm of annual rainfall evenly distributed over the growing season.
IV. The Ganga-Satluj plains are a major wheat-producing zone.
V. Black soil regions of the Deccan are totally unsuitable for wheat cultivation.
Which combination represents the correct statements?
(1) I, II, III and IV
(2) I, III, IV and V
(3) II, III, IV and V
(4) I, II, III and V
(5) Question not attempted

59. Which of the following statements is true regarding India's position in global spice trade?
(1) India imports almost all its spices from Southeast Asia due to high demand.
(2) Spice cultivation in India is strictly limited to the southern Western Ghats.
(3) Saffron is cultivated widely across the semi-arid Deccan plateau of central India.
(4) India is the world's largest producer, consumer, and exporter of spices.
(5) Question not attempted

60. Olericulture, a prominent branch of horticulture practiced in India, specifically refers to the cultivation of which of the following?
(1) Grapes for winemaking
(2) Vegetables for human consumption
(3) Trees and shrubs for timber
(4) Medicinal herbs and roots
(5) Question not attempted

61. Which of the following is considered a major cut-flower cultivated commercially under protected greenhouse environments in India for export?
(1) Marigold
(2) Jasmine
(3) Rose
(4) Hibiscus
(5) Question not attempted

62. According to the standard Agro-Climatic Zones, which of the following represents the correct sequence of zones moving from extreme North-West to the East of India?
(1) Western Himalayan Region, Trans-Gangetic Plains, Middle Gangetic Plains, Eastern Himalayan Region
(2) Eastern Himalayan Region, Middle Gangetic Plains, Trans-Gangetic Plains, Western Himalayan Region
(3) Trans-Gangetic Plains, Western Himalayan Region, Eastern Himalayan Region, Middle Gangetic Plains
(4) Western Himalayan Region, Eastern Himalayan Region, Trans-Gangetic Plains, Middle Gangetic Plains
(5) Question not attempted

63. Which of the following practices is entirely avoided in certified organic farming systems?
(1) Use of genetically modified organisms (GMOs)
(2) Crop rotation
(3) Application of composted animal manure
(4) Intercropping
(5) Question not attempted

64. In the following question, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.
Assertion (A): Floriculture holds significant export potential for India in the agricultural sector.
Reason (R): Diverse agro-climatic conditions across India allow for the cultivation of a wide variety of temperate and tropical flowers year-round.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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28. (2) II and III
Mustard is an important oilseed in India, primarily grown during the Rabi season rather than the Kharif season. It requires a cool and dry climate for optimal growth and is highly susceptible to damage from frost. Geographically, Rajasthan is the leading producer of mustard, benefiting from the suitable winter conditions and the crop's ability to grow with relatively limited irrigation.

29. (3) Bales of 170 kg each
In Indian agricultural statistics, raw cotton production is standardized and quantified using the unit of a "bale." Each standard bale of cotton in India is defined as weighing exactly 170 kilograms. This measurement allows for consistent tracking of crop yields, trade volumes, and textile industry consumption across different states. It is a vital metric for both domestic and international trade.

30. (4) The invention and widespread use of cheaper synthetic substitutes like nylon.
The traditional jute industry in India faces significant challenges in the global market primarily due to the emergence of cheaper synthetic substitutes. Materials like nylon and plastic offer a low-cost alternative for packaging and industrial use. Although jute is biodegradable and environmentally friendly, the price advantage of synthetics has led to a decline in international demand for this natural fiber.

31. (4) Oats
India produces a wide variety of oilseeds, including groundnut, soybean, sesame, mustard, and sunflower. These crops are essential for the production of edible oils and industrial raw materials. In contrast, oats are categorized as a cereal grain primarily used as food for humans and fodder for livestock. Oats do not belong to the category of major oilseed crops grown.

32. (2) I only
India is a global leader in horticulture, but it is currently the second-largest producer of fruits and vegetables in the world, following China. The National Horticulture Mission was indeed launched to promote the sector's holistic growth. Major crops include mango, banana, and citrus fruits. However, high post-harvest losses due to inadequate cold storage and infrastructure remain a significant challenge.

33. (2) It was initially introduced on the Baba Budan Giri hills in Karnataka.
Coffee cultivation in India has a rich history, beginning when the Arabica variety was introduced from Yemen. The first coffee plants were sown on the Baba Budan Giri hills in Karnataka, which remains the leading coffee-producing state today. Most Indian coffee is grown under a canopy of shade trees in the Western Ghats, protecting the plants from intense tropical sunlight.

34. (1) Rainfall above 200 cm with a moist and humid climate.
Natural rubber is primarily an equatorial crop that requires specific climatic conditions to be grown commercially. It thrives in areas with high temperatures, typically above twenty-five degrees Celsius, and very high humidity. Most importantly, it requires heavy annual rainfall exceeding two hundred centimeters, distributed evenly throughout the year. These conditions are predominantly found in tropical parts of South India.

35. (3) Kerala
Kerala is famously known as the 'Spice Garden of India' due to its ancient history and massive production of various spices. The state's tropical climate and fertile hilly terrain are ideal for cultivating high-value crops like black pepper, cardamom, cinnamon, and cloves. These spices have been exported from the Malabar Coast for centuries, making Kerala a central global hub.

36. (4) A-iii, B-ii, C-iv, D-i
Coffee production in India is concentrated in the southern states. Karnataka is the leading producer, contributing over seventy percent of total output. Kerala follows as the second-largest producer, while Tamil Nadu ranks third, with significant plantations in the Nilgiris. Andhra Pradesh represents a non-traditional area where coffee cultivation is currently expanding into hilly tribal regions to diversify agriculture.

37. (3) Jharkhand
Commercial floriculture in India is concentrated in states with favorable climates and proximity

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are usually situated on gently sloping hillsides to ensure drainage occurs quickly.

56. (2) A-ii, B-i, C-iii, D-iv
Coarse cereals are important for regional food security in India. Maharashtra is the leading producer of Jowar, while Rajasthan leads in Bajra production due to its sandy soils. Karnataka is the top producer of Ragi, a crop valued for its nutritional content. Barley is an important crop in Uttar Pradesh, where it is grown during the Rabi season in plains.

57. (3) The introduction of the high-quality sweet Arabica variety from Yemen.
Indian coffee gained a high reputation in the international market primarily because of the introduction of the premium Arabica variety from Yemen. This variety is known for its superior taste and aromatic qualities. Initially cultivated in the Baba Budan Giri hills, Indian Arabica became famous globally, helping the country establish itself as a producer of high-quality coffee for international trade markets.

58. (1) I, II, III and IV
Wheat is a vital Rabi crop that requires a cool growing season and bright sunshine during the ripening period. It needs moderate annual rainfall between fifty and seventy-five centimeters. The Ganga-Satluj plains in the north and the black soil region of the Deccan are both major wheat-producing zones. Contrary to some beliefs, wheat can be successfully grown in central India.

59. (4) India is the world's largest producer, consumer, and exporter of spices.
India holds a dominant position in the global spice market as the world's largest producer, consumer, and exporter. The country produces a vast array of spices, ranging from black pepper and cardamom in the south to cumin and coriander in the north. Saffron, a high-value spice, is specifically cultivated in the temperate climate of Jammu and Kashmir, not central India.

60. (2) Vegetables for human consumption
Olericulture is a specialized branch of horticulture that deals specifically with the production, storage, processing, and marketing of vegetables. It involves the cultivation of non-woody plants for human consumption, including leafy greens, root vegetables, and various legumes. This field is essential for meeting nutritional needs and supports the development of sustainable food systems across different Indian agro-climatic zones.

61. (3) Rose
The rose is the most significant cut flower grown commercially in India for the international market. While traditional flowers like marigold and jasmine are widely used domestically for religious purposes, roses are primarily cultivated in protected greenhouse environments for export. These settings allow for the production of high-quality, long-stemmed varieties that meet the strict standards required for global floral trade.

62. (1) Western Himalayan Region, Trans-Gangetic Plains, Middle Gangetic Plains, Eastern Himalayan Region
The agro-climatic zones of India are arranged based on geographical location and climatic conditions. Moving from the extreme northwest to the east, the sequence begins with the Western Himalayan Region. It is followed by the Trans-Gangetic Plains, which include Punjab and Haryana. Next is the Middle Gangetic Plains, covering Uttar Pradesh and Bihar, and finally, the sequence ends with the Eastern Himalayan.

63. (1) Use of genetically modified organisms (GMOs)
Organic farming is a holistic production system that emphasizes ecological balance and biodiversity. One of its strictest rules is the total prohibition of genetically modified organisms. Instead, it relies on traditional seeds and natural methods such as crop rotation, intercropping, and the application of composted animal manure. These practices are designed to maintain soil health without using synthetic chemicals.

64. (1) Both A and R are true and R is the correct explanation of A.
India possesses immense export potential in floriculture because of its diverse agro-climatic conditions. Different regions of the country can support a wide variety of both temperate and tropical flowers throughout the year. This geographical advantage allows for year-round production and the ability to grow specific

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one and twenty-seven degrees Celsius. Jowar is a rain-fed crop grown in moist areas, while Bajra grows well on sandy and shallow black soils, especially in Rajasthan. Ragi is highly versatile and can grow in various soil types, including loamy.

47. (1) They fix nitrogen from the air, thereby restoring soil fertility.
Most pulses are leguminous crops, making them essential for sustainable agriculture. They possess the unique ability to fix atmospheric nitrogen into the soil through symbiotic bacteria in their root nodules. This natural process helps in restoring and maintaining soil fertility, which is why pulses are commonly used in crop rotation. Arhar is the only major pulse that does not fix nitrogen.

48. (1) I and II
India is divided into various agricultural regions based on topography and climate. The Western Dry Region, covering Rajasthan, is defined by low rainfall and arid conditions. The West Coast Plains and Ghats are famous for high-rainfall plantation crops like spices, coffee, and rubber. However, the Island Region focus is primarily on tropical crops like coconut and areca nut, not apples.

49. (2) Punjab
Sugarcane is grown in both subtropical and tropical belts in India. While Uttar Pradesh is the leading producer in the north, southern states like Maharashtra, Karnataka, and Tamil Nadu are major producers in the tropical belt. These southern regions are known for having higher sucrose content and a longer crushing season. Punjab, located in the northern subtropical zone, is excluded.

50. (1) Season - Rabi
Cotton is primarily a Kharif crop that requires a long maturation period of six to eight months. It grows best in the regur or black cotton soil found in the Deccan Plateau. Essential requirements include at least two hundred and ten frost-free days and bright sunshine during its growth. While it is grown in northern states like Punjab, its season is Kharif.

51. (3) Hooghly basin
The Hooghly basin in West Bengal is the most globally recognized hub for jute cultivation and processing. The region provides the perfect combination of fertile alluvial soil, high temperatures, and high humidity. Furthermore, the abundance of water from the Hooghly River and its tributaries is crucial for the retting process, where jute stalks are soaked to separate the commercial fibers.

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52. (4) II, III and IV
Rice is a critical Kharif crop in India that requires high humidity and significant water. Although China is the world's largest producer, India follows closely in the second position. In states like Punjab and Haryana, rice cultivation is made possible through intensive irrigation using canals and tubewells. Modern techniques like Direct Seeded Rice are being promoted to reduce water consumption.

53. (2) Both Statement I and Statement II are correct but Statement II does not explain Statement I.
Groundnut is a major Kharif oilseed that accounts for nearly half of the total oilseed production in India. It grows well in various soils but is most productive in well-drained loamy and sandy soils. Gujarat is consistently the leading producer of groundnut in the country. While both statements are true, the fact that Gujarat is a leader doesn't define the season.

54. (1) A, B, C, D
Rice production in India varies significantly by state based on water availability and climate. West Bengal is the largest producer, benefiting from high rainfall and multiple crops per year. Uttar Pradesh ranks second due to its vast fertile plains. Punjab is the third-largest producer, relying heavily on advanced irrigation. Rajasthan produces the least among these four due to its arid environment.

55. (1) Deep, fertile, well-drained soil rich in humus and organic matter.
Tea is a plantation crop that requires very specific soil conditions to thrive. It grows best in deep, fertile, and well-drained soil that is rich in organic matter and humus. While tea requires high rainfall, it is extremely sensitive to stagnant water around its roots. Therefore, tea plantations

Codes:
(1) A-iv, B-i, C-iii, D-ii
(2) A-ii, B-i, C-iii, D-ii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-ii, C-iii, D-i
(5) Question not attempted

23. Which state holds the dominant position in both the reserves and production of Bauxite in India, accounting for more than half of the country's output?
(1) Gujarat
(2) Jharkhand
(3) Maharashtra
(4) Odisha
(5) Question not attempted

24. Consider the following statements regarding Lead and Zinc:
I. They are polymetallic minerals usually found together in the same ore body.
II. Rajasthan holds a near monopoly over the production of lead and zinc in India.
III. Galena is a major ore of zinc while sphinglerite is a major ore of lead.
Which of the above statements is/are incorrect?
(1) I only
(2) II only
(3) III only
(4) I and II only
(5) Question not attempted

25. Aluminium smelters are often located close to sources of cheap electricity rather than immediately adjacent to bauxite mines. What is the primary cause for this location strategy?
(1) Bauxite loses significant weight during transportation.
(2) The environmental regulations near mines prohibit the establishment of smelters.
(3) The electrolytic process of smelting aluminium is extremely energy-intensive.
(4) Bauxite requires immediate rapid cooling post-extraction, requiring electrical chilling.
(5) Question not attempted

26. Given below are two statements:
Statement I: The Kolar Gold Fields (KGF) and Hutti mines are primary sources of gold in India, both located in Karnataka.
Statement II: Gold mining in the Kolar Gold Fields is highly cost-effective due to the shallow depth of the ore veins.
Select the correct option:
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

27. Which of the following sequences represents the correct descending order of the top three bauxite producing states in India based on typical recent outputs?
(1) Odisha, Gujarat, Jharkhand
(2) Jharkhand, Odisha, Maharashtra
(3) Gujarat, Maharashtra, Odisha
(4) Odisha, Chhattisgarh, Andhra Pradesh
(5) Question not attempted

28. Identify the incorrect pair regarding gold deposits in India.
(1) Kolar – Karnataka
(2) Zawar – Rajasthan
(3) Hutti – Karnataka
(4) Ramgiri – Andhra Pradesh
(5) Question not attempted

29. Consider the following statements regarding Bauxite:
I. It is formed by the decomposition of a wide variety of rocks rich in aluminium silicates.
II. Panchpatmali deposits in Koraput district are highly significant bauxite deposits.
III. Bauxite is directly used to manufacture steel due to its high iron content.
IV. Amarkantak plateau and Maikal hills contain substantial bauxite deposits.
Which of the above statements is/are correct?
(1) I, II and IV only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

30. During the processing of lead and zinc ores from the Zawar mines, several valuable by-products are recovered. Which of the following is an odd

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varieties that are in high demand globally, making India competitive in international trade markets.

65. (2) Central Plateau and Hills Region - Kerala
Agro-climatic zones are mapped to specific geographical regions with similar characteristics. The Western Dry Region correctly corresponds to Rajasthan, and the Island Region includes Andaman and Nicobar. The Upper Gangetic Plains are located in Uttar Pradesh. However, the Central Plateau and Hills Region covers states like Madhya Pradesh and Chhattisgarh, whereas Kerala falls under the West Coast Plains and Ghats.

66. (1) A-ii, B-i, C-iii, D-iv
Tea is grown in diverse hilly regions of India. The Brahmaputra Valley in Assam is the world's largest contiguous tea-growing area. Darjeeling is famous for its high-altitude slopes and GI-tagged orthodox tea. The Nilgiris in the south produce distinctive fragrant tea varieties. Meanwhile, the Kangra Valley in Himachal Pradesh is a smaller but well-known region where high-quality tea is produced.

67. (3) e-NAM (National Agriculture Market)
The National Agriculture Market, or e-NAM, is a pan-India electronic trading portal that networks existing APMC mandis to create a unified national market for agricultural commodities. By removing geographical barriers and providing a single platform for price discovery, it aims to reduce transaction costs and ensure that farmers receive better prices. This initiative is a major step toward modernizing marketing.

68. (4) I and II
India plays a unique role in the global pulse market, being both the largest producer and the largest consumer in the world. Pulses are a vital source of protein for the predominantly vegetarian population. Although India produces a massive quantity of pulses like gram, tur, and urad, the high domestic demand often necessitates imports to ensure a sufficient supply.

69. (3) Shallow cyclonic depressions originating over the Mediterranean Sea.
Western cyclonic disturbances are shallow depressions that originate over the Mediterranean Sea and travel eastward toward India. During the winter months, these disturbances bring much-needed light rainfall to the northwest regions. This precipitation is highly beneficial for the Rabi crops, especially wheat, as it provides moisture during the critical growing stage when the weather is otherwise dry and cool.

70. (2) Brazil
Brazil currently holds the position of the world's largest producer of sugarcane, benefiting from its vast tropical landscapes and advanced ethanol industry. India is the second-largest producer, with cultivation spread across the northern subtropical plains and the southern tropical belt. Both countries dominate the global sugar market, but Brazil's high productivity and large-scale commercial plantations keep it as the leader.

71. (4) Madhya Pradesh and Maharashtra are the leading soybean producers.
Soybean is a major oilseed crop that has seen rapid growth in India over the last few decades. It is primarily grown as a Kharif crop during the monsoon season. Geographically, its production is heavily concentrated in the central part of the country, with Madhya Pradesh and Maharashtra being the leading producers. These states provide the necessary soil conditions and climate.

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72. (1) I, II and III
Cotton is an ancient crop in India, which is considered its original home. It requires a long maturation period of six to eight months and at least two hundred and ten frost-free days with bright sunshine. It is traditionally grown as a Kharif crop. However, heavy rainfall during the ball-bursting stage is actually harmful as it can damage the fiber.

73. (3) Conversion period
When a farmer switches from conventional to organic farming, the land undergoes a mandatory "conversion period." During these three years, the soil gradually recovers from the residues of synthetic chemicals and fertilizers used previously. While the farmer follows organic practices, the produce cannot yet be sold with an official organic seal. This phase is crucial for ensuring long-term biological integrity.

to major urban markets or export hubs. Karnataka, Tamil Nadu, and Maharashtra are traditional leaders in this sector, utilizing both open-field and greenhouse technologies. Jharkhand, while developing its agricultural sector, is not traditionally considered a major hub for commercial floriculture compared to the established southern centers.

38. (2) I and V
Indian agriculture faces several hurdles, but some common perceptions are incorrect. First, the average size of landholdings is actually decreasing due to fragmentation, not increasing. Second, while the APMC system regulates markets, it does not universally guarantee a maximum retail price to all farmers. Valid challenges include the depletion of groundwater, high post-harvest losses, and limited formal credit access.

39. (4) Eastern Himalayan Region: High rainfall, dense forest, and shifting cultivation.
The Eastern Himalayan Region is characterized by high annual rainfall, rugged hilly terrain, and dense forest cover. Due to these geographical features, shifting cultivation, locally known as Jhumming, is a prominent agricultural practice among tribal communities. This contrasts with other zones like the Western Dry Region, which is arid, or the Trans-Gangetic Plains, which feature intensive irrigation and productivity.

40. (1) Uttar Pradesh
Wheat is the second most important cereal crop in India and a staple for millions. While Punjab and Haryana are famous for their high productivity and the success of the Green Revolution, Uttar Pradesh is the leading producer in terms of total volume. This is due to the state's vast geographical area and the extensive fertile plains of northern India.

41. (3) More people engaged in work on a piece of land than are actually required.
Disguised unemployment is a common phenomenon in Indian agriculture where more people are engaged in farming a piece of land than are actually needed. If some workers are removed, total production remains unchanged because their marginal productivity is zero. This situation arises primarily because of the lack of alternative employment opportunities in manufacturing and service sectors for rural workforces.

42. (1) Mustard
The Zaid season is a short cropping period during the summer months of April to June. It primarily involves the cultivation of fast-growing crops like watermelon, muskmelon, cucumber, and various vegetables that thrive in hot weather. Mustard, however, is a major Rabi crop that requires the cool temperatures of winter to grow and is harvested before the summer begins.

43. (4) High temperature (above 25°C), high humidity, and rainfall above 100 cm.
Rice is a tropical Kharif crop that requires specific environmental conditions for a successful harvest. It needs high temperatures, typically above twenty-five degrees Celsius, and high humidity throughout its growth cycle. Additionally, rice requires substantial water, necessitating an annual rainfall of over one hundred centimeters. In regions with lower rainfall, the crop can only be grown successfully through intensive irrigation.

44. (3) A is true but R is false.
The share of agriculture in India's Gross Domestic Product has declined significantly since independence, but this is not because the sector has seen negative growth. In reality, while agricultural production has increased through modernization, the industry and service sectors have grown at a much faster rate. This structural shift is typical of developing economies transitioning toward more diverse industrial bases.

45. (3) It is a Kharif crop grown in the Rabi season in states like Bihar.
Maize is traditionally a Kharif crop across most parts of India, requiring warm temperatures and moderate rainfall. However, a unique feature of its cultivation is that it is grown as a Rabi crop during the winter season in specific regions like Bihar. This adaptability allows farmers to utilize the crop for both food and fodder requirements across different environmental conditions.

46. (4) A-iv, B-iii, C-i, D-ii
Coarse cereals are categorized by their specific environmental needs. Maize is used for food and fodder, thriving at temperatures between twenty-

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CHAPTER 13

Minerals : Metallic and Non Metallic

1. The major metallic minerals in India are primarily associated with which of the following geological formations?
(1) Recent Tertiary sedimentary rock sequences
(2) Ancient crystalline and metamorphic rocks
(3) Extensive Quaternary alluvial silt deposits
(4) Specific Mesozoic volcanic rock formations
(5) Question not attempted

2. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): The Peninsular plateau region of India holds the bulk of the country's metallic mineral reserves.
Reason (R): The Peninsular plateau is primarily composed of ancient crystalline, igneous, and metamorphic rocks which are highly mineralised.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

3. Which of the following is the highest quality iron ore, characterised by a high iron content of up to 70 percent and excellent magnetic qualities?
(1) Hematite
(2) Siderite
(3) Magnetite
(4) Limonite
(5) Question not attempted

4. Consider the following statements regarding iron ore deposits in India:
I. Jharkhand and Odisha form a major contiguous iron ore belt.
II. Bailadila mines in Chhattisgarh are renowned for producing high-grade hematite ore.
III. Kudremukh deposits in Karnataka are exclusively mined for domestic consumption.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

5. Which of the following statements correctly identifies the major iron ore producing districts in the state of Odisha?
(1) Bellary, Chitradurga, and Tumakuru
(2) Dantewada, Bastar, and Durg
(3) Kendujhar, Mayurbhanj, and Sundargarh
(4) Singhbhum, Palamu, and Ranchi
(5) Question not attempted

6. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Iron Ore Mine)
A. Bailadila
B. Noamundi
C. Kudremukh
D. Badampahar
List II: (State)
i. Karnataka
ii. Odisha
iii. Chhattisgarh
iv. Jharkhand
Codes:
(1) A-iii, B-iv, C-i, D-ii
(2) A-ii, B-i, C-iv, D-iii
(3) A-iii, B-ii, C-iv, D-i
(4) A-iv, B-iii, C-i, D-ii
(5) Question not attempted

7. Which of the following minerals is predominantly found in the non-Peninsular

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74. (1) Uttar Pradesh and Bihar
The Middle Gangetic Plain Region is a significant agricultural zone that primarily encompasses eastern Uttar Pradesh and the state of Bihar. This region is characterized by fertile alluvial soil and high annual rainfall. Because of the extremely high population density, intensive subsistence farming is the dominant practice, where farmers focus on producing food grains to support their local communities.

75. (4) Fragmentation of landholdings
While many agricultural problems are related to technology or environment, the fragmentation of landholdings is a fundamental institutional challenge. It stems from inheritance laws and social structures that divide land into smaller, non-contiguous plots over time. This makes it difficult to implement large-scale management, irrigation projects, or modern mechanization, thereby limiting economic efficiency and the adoption of new innovations.

76. (2) A-ii, B-i, C-iv, D-iii
Vegetable production is spread across different Indian states based on their specific climatic strengths. Maharashtra is the leading producer of onions. Uttar Pradesh is the top producer of potatoes, benefiting from its fertile plains. Andhra Pradesh is a major producer of tomatoes, while Kerala is specifically known for its cultivation of tapioca, which is a regional staple food.

77. (3) Continuous heavy rainfall leading to waterlogging.
Maize is a versatile crop but has specific environmental limits. It thrives in well-drained, fertile loamy soil and requires plenty of sunshine for photosynthesis. The ideal temperature range for its growth is twenty-one to twenty-seven degrees Celsius. However, maize is highly sensitive to waterlogging. Continuous heavy rainfall that causes water to stand can lead to root rot and crop failure.

78. (1) V only
Natural rubber is an equatorial crop that requires a warm, humid climate with temperatures above twenty-five degrees Celsius and heavy rainfall exceeding two hundred centimeters. Kerala is the largest producer in India, supported by these tropical conditions. The statement that rubber is grown in the arid zones of western Rajasthan is incorrect, as the desert climate lacks necessary moisture.

79. (1) Both Statement I and Statement II are correct and Statement II explains Statement I.
Pulse cultivation is concentrated in the rainfed regions of peninsular and central India because these crops are highly drought-tolerant. Unlike water-intensive crops like rice, pulses require very little moisture to grow and can survive in relatively dry conditions. This makes them ideal for regions where irrigation is limited. By growing pulses, farmers effectively utilize drier lands while improving soil health.

80. (2) Soil salinization and alkalinization of the land due to excessive watering.
In states like Punjab and Haryana, the practice of over-irrigation has led to serious environmental issues, specifically soil salinization and alkalinization. When excessive water is applied to the fields, it causes the water table to rise, bringing dissolved salts to the surface. As the water evaporates, these salts remain in the topsoil, eventually making the land toxic for plants.

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15. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Mineral)
A. Copper
B. Manganese
C. Iron Ore
D. Bauxite
List II: (Prominent Deposit/Mine)
i. Bailadila
ii. Panchpatmali
iii. Malanjkhand
iv. Nagpur-Bhandara
Codes:
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-i, C-iv, D-ii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

16. Which of the following statements regarding the Kudremukh iron ore deposits is incorrect?
(1) Deposits are situated within the Western Ghats of Karnataka state.
(2) Ore is transported by rail to the east for domestic steel plants.
(3) The iron ore deposits are globally recognized as some of the largest.
(4) The mining facility operates as a dedicated hundred percent export unit.
(5) Question not attempted

17. The Malanjkhand deposits of Madhya Pradesh are crucial for India's industrial sector because they yield a metal primarily characterized by:
(1) High magnetic permeability used in electronics
(2) High electrical conductivity and ductility
(3) High resistance to corrosion used in galvanization
(4) Extreme hardness used in cutting tools
(5) Question not attempted

18. Consider the following statements about Manganese in India:
I. It is found in almost all geological formations but mainly associated with the Dharwar system.
II. Odisha is one of the leading producers of Manganese.
III. It is widely used in manufacturing bleaching powder and insecticides.
IV. The Singhbhum district is solely responsible for manganese extraction in eastern India.
V. Major manganese deposits in Maharashtra are located in the Nagpur and Bhandara districts.
Which of the above statements is/are incorrect?
(1) I and V only
(2) II and III only
(3) III and IV only
(4) IV only
(5) Question not attempted

19. The Khetri copper complex, one of the oldest copper extraction sites in India, is located in which district of Rajasthan?
(1) Udaipur
(2) Bhilwara
(3) Jhunjhunu
(4) Alwar
(5) Question not attempted

20. Which of the following is a correctly matched pair of a copper mine and its respective state?
(1) Malanjkhand – Jharkhand
(2) Ghatsila – Madhya Pradesh
(3) Agnigundala – Odisha
(4) Khetri – Rajasthan
(5) Question not attempted

21. The historic Zawar mines of Rajasthan are globally recognized for being one of the oldest extraction sites for which of the following minerals?
(1) Copper and Gold
(2) Bauxite and Mica
(3) Lead and Zinc
(4) Chromite and Manganese
(5) Question not attempted

22. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Mineral)
A. Bauxite
B. Zinc
C. Gold
D. Chromite
List II: (Dominant Producing State)
i. Rajasthan
ii. Odisha
iii. Karnataka
iv. Jharkhand

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(sedimentary) geological formations of India rather than the Peninsular shield?
(1) Copper
(2) Chromite
(3) Bauxite
(4) Petroleum
(5) Question not attempted

8. Given below are two statements:
Statement I: The Singhbhum district is famous exclusively for iron ore mining and lacks other metallic minerals.
Statement II: Singhbhum forms a part of the rich mineral belt extending across Jharkhand and Odisha.
Select the correct option:
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

9. Arrange the following types of iron ore based on their average iron content in decreasing order:
I. Siderite
II. Magnetite
III. Limonite
IV. Hematite
Select the correct order using the options below:
(1) II, IV, III, I
(2) IV, II, I, III
(3) II, IV, I, III
(4) IV, III, II, I
(5) Question not attempted

10. Identify the odd one out among the following based on their status as major iron ore mining regions in India.
(1) Khetri
(2) Bailadila
(3) Kudremukh
(4) Singhbhum
(5) Question not attempted

11. Which of the following states is the largest producer of manganese ore in India and is home to the Balaghat mines?
(1) Odisha
(2) Maharashtra
(3) Karnataka
(4) Madhya Pradesh
(5) Question not attempted

12. Consider the following statements regarding copper deposits in India:
I. The Balaghat mines in Madhya Pradesh produce over half of India's copper.
II. The Khetri copper belt is located in the Aravali range of Rajasthan.
III. The Singhbhum district of Jharkhand is a leading producer of copper.
IV. India is highly self-sufficient in copper production and heavily exports it.
Which of the above statements is/are correct?
(1) I, II and IV only
(2) I, II and III only
(3) II, III and IV only
(4) I, III and IV only
(5) Question not attempted

13. Manganese is primarily used as an essential raw material in the manufacturing of which of the following?
(1) Cement and fertilizers
(2) Electrical wires and cables
(3) Steel and ferro-alloys
(4) Plaster of Paris and ceramics
(5) Question not attempted

14. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Manganese is an indispensable mineral for the iron and steel industry.
Reason (R): Nearly 10 kilograms of manganese is required to manufacture one tonne of steel to remove impurities and harden the alloy.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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one out, as it is NOT a typical by-product of this specific polymetallic ore refining?
(1) Silver
(2) Cadmium
(3) Cobalt
(4) Platinum
(5) Question not attempted

31. The Sukinda Valley is globally renowned for containing over 95% of India's reserves of which of the following minerals?
(1) Chromite
(2) Bauxite
(3) Manganese
(4) Copper
(5) Question not attempted

32. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Limestone deposits are heavily sought after by the cement manufacturing industry.
Reason (R): Limestone is the basic raw material required for the production of cement clinker.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

33. Mica is extensively utilized in the electrical and electronic industries primarily because of which unique combination of properties?
(1) High electrical conductivity and a notably low melting point
(2) High di-electric strength and resistance to high voltage
(3) Extreme physical malleability and significant magnetic permeability
(4) High heat conductivity and relatively low tensile strength
(5) Question not attempted

34. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Non-Metallic Mineral)
A. Limestone
B. Mica
C. Rock Phosphate
D. Gypsum
List II: (Major Industrial Use)
i. Plaster of Paris and Cement retarder
ii. Electrical insulation
iii. Superphosphate fertilizers
iv. Cement clinker
Codes:
(1) A-iv, B-ii, C-iii, D-i
(2) A-i, B-ii, C-iv, D-iii
(3) A-iv, B-iii, C-ii, D-i
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

35. Which of the following statements correctly highlights the significance of Chromite deposits in Odisha?
(1) Used for electrical wire manufacturing due to high conductivity.
(2) Acts as a primary fertilizer ingredient for acidic coastal soils.
(3) Metallurgical use for stainless steel and refractory bricks.
(4) Exported for the extraction of high-grade aluminium metal.
(5) Question not attempted

36. Consider the following statements about Mica distribution in India:
I. Jharkhand is a leading producer with the Koderma-Gaya-Hazaribagh belt being predominant.
II. In Rajasthan, the major mica producing area is situated around Ajmer and Bhilwara.
III. Andhra Pradesh is known for the Nellore mica belt.
IV. Mica occurs exclusively in the form of massive, unbreakable sedimentary blocks.
V. India is one of the world's leading exporters of sheet mica.
Which of the above statements is/are correct?
(1) I, II, III and V only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

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67. Which of the following practices is an exception and is NOT considered a measure for the sustainable use and conservation of minerals?
(1) Adoption of advanced technologies to utilize low-grade ores
(2) Promotion of recycling of metals
(3) Unregulated artisanal rat-hole mining
(4) Substitution of scarce minerals with abundant alternatives
(5) Question not attempted

68. Consider the following statements regarding the challenges of sustainable mineral use:
I. Mining operations often lead to deforestation and loss of biodiversity.
II. Proper disposal of mine waste and reclamation of abandoned mines are costly and complex.
III. Unscientific mining methods reduce the life span of mineral reserves.
IV. The use of fossil fuels in the extraction process contributes to greenhouse gas emissions.
V. Sustainable mining mandates that mineral extraction should purely focus on immediate economic gains irrespective of environmental impact.
Which of the above statements represents the correct understanding of sustainable use challenges?
(1) I, II, III and V only
(2) I, II, IV and V only
(3) I, II, III and IV only
(4) II, III, IV and V only
(5) Question not attempted

69. Given below are two statements:
Statement I: The discovery of hydrocarbons in the Barmer basin drastically transformed the economic landscape of western Rajasthan.
Statement II: The Barmer basin oil fields are managed exclusively by the State Government of Rajasthan without any central or private involvement.
Select the correct option:
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

70. Which of the following pairs correctly identifies a challenge in mineral conservation with its appropriate mitigation strategy?
(1) Environmental degradation – Accelerating open-cast mining near river beds
(2) Depletion of high-grade ores – Upgrading technology to process low-grade ores economically
(3) Over-reliance on metallic minerals – Banning the use of synthetic substitutes
(4) High energy costs in smelting – Utilizing exclusively charcoal for smelting operations
(5) Question not attempted

71. The Khetri copper belt is historically significant not just for modern mining, but because evidence suggests mining activities here date back to which ancient civilization?
(1) Early Vedic Period
(2) Ancient Mauryan Empire
(3) Classic Gupta Empire
(4) Indus Valley Civilization
(5) Question not attempted

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72. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Mineral)
A. Iron Ore
B. Coal
C. Gold
D. Zinc
List II: (Specific Mine/Field)
i. Hutti
ii. Zawar
iii. Noamundi
iv. Jharia
Codes:
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-i, C-iv, D-ii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

73. Which of the following statements about the distribution of Bauxite in India is incorrect?
(1) It is mainly found in plateau regions and hill ranges of peninsular India.

(5) Question not attempted

45. Which of the following statements correctly differentiates Gondwana coal from Tertiary coal in India?
(1) Tertiary coal is significantly harder and has higher carbon than Gondwana.
(2) Gondwana coal is in the northeast; Tertiary coal is in the Peninsula.
(3) Gondwana coal is older metallurgical grade; Tertiary is younger lignite.
(4) Gondwana coal reserves are negligible compared to vast Tertiary reserves.
(5) Question not attempted

46. Identify the odd one out from the following coalfields based on their geological formation period.
(1) Jharia
(2) Raniganj
(3) Singrauli
(4) Makum
(5) Question not attempted

47. Arrange the following stages of coal formation in the correct geological sequence from the earliest (least metamorphosed) to the most advanced (highest carbon content):
I. Bituminous
II. Peat
III. Anthracite
IV. Lignite
Select the correct order using the options below:
(1) II, IV, I, III
(2) II, I, IV, III
(3) IV, II, I, III
(4) I, II, IV, III
(5) Question not attempted

48. Consider the following statements about Gypsum:
I. It is a hydrated sulphate of calcium.
II. It is widely used in the cement industry to regulate the setting time of cement.
III. Heating gypsum to a high temperature converts it directly into limestone.
IV. Plaster of Paris is manufactured from gypsum.
Which of the above statements is/are incorrect?
(1) I and II only
(2) III only
(3) III and IV only
(4) IV only
(5) Question not attempted

49. Which of the following characteristics is an exception and is NOT generally associated with Gondwana coal fields?
(1) They are located in river valleys like Damodar, Mahanadi, and Godavari.
(2) They are primarily associated with the Tertiary rock formations of the Himalayas.
(3) They account for the majority of India's coal production.
(4) They contain good quality bituminous coal.
(5) Question not attempted

50. The Jhamarkotra mines, playing a pivotal role in reducing India's import dependency for fertilizer raw materials, yield which of the following?
(1) Rock Phosphate
(2) Agricultural Gypsum
(3) Mineral Potash
(4) Iron Pyrites
(5) Question not attempted

51. Which of the following is recognized as the oldest coalfield in India, having commenced commercial extraction in the 18th century?
(1) Jharia
(2) Bokaro
(3) Raniganj
(4) Korba
(5) Question not attempted

52. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Major Coalfield)
A. Jharia
B. Raniganj
C. Singrauli
D. Korba
List II: (State)
i. West Bengal
ii. Chhattisgarh
iii. Jharkhand
iv. Madhya Pradesh
Codes:
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-iii, C-ii, D-iv
(3) A-iii, B-iv, C-i, D-ii
(4) A-iv, B-i, C-iii, D-ii

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37. Which of the following regions is an exception and is NOT recognised as a significant mica-producing belt in India?
(1) Koderma district
(2) Nellore district
(3) Digboi region
(4) Bhilwara district
(5) Question not attempted

38. A cement manufacturing plant is typically established close to limestone quarries rather than the market. This concept application reflects that limestone is a:
(1) Weight-gaining raw material
(2) Weight-losing, bulky raw material
(3) High-value, low-volume commodity
(4) Perishable raw material
(5) Question not attempted

39. Given below are two statements:
Statement I: Limestone is found in association with rocks composed of calcium carbonates or calcium and magnesium carbonates.
Statement II: Limestone is found strictly in the igneous rock formations of the Peninsular plateau.
Select the correct option:
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

40. Which of the following pairs correctly matches a famous Mica belt with its respective state?
(1) Koderma – Jharkhand
(2) Nellore – Karnataka
(3) Ajmer – Madhya Pradesh
(4) Hazaribagh – Odisha
(5) Question not attempted

41. Rajasthan dominates the Indian production of Gypsum. Which of the following districts in Rajasthan is renowned for having the largest gypsum deposits?
(1) Banswara
(2) Dungarpur
(3) Bikaner
(4) Jhalawar
(5) Question not attempted

42. Consider the following statements regarding Rock Phosphate:
I. It is an essential raw material for the production of phosphatic fertilizers.
II. Jhamarkotra in the Udaipur district of Rajasthan is the largest rock phosphate deposit in India.
III. Rock phosphate is predominantly mined in the coastal alluvial tracts of Kerala.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

NODIA

43. Gypsum is widely applied in agricultural fields in Rajasthan and Punjab. What is the primary cause-and-effect relationship justifying this practice?
(1) Gypsum increases soil acidity, benefiting tea plantations.
(2) Gypsum rapidly increases the water retention capacity of sandy desert soils.
(3) Gypsum serves as a direct source of nitrogen for cereal crops.
(4) Gypsum acts as a soil amendment to reclaim alkaline and saline soils.
(5) Question not attempted

44. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Mineral)
A. Rock Phosphate
B. Gypsum
C. Copper
D. Lead and Zinc
List II: (Major Producing District in Rajasthan)
i. Udaipur (Zawar)
ii. Udaipur (Jhamarkotra)
iii. Bikaner
iv. Jhunjhunu (Khetri)
Codes:
(1) A-ii, B-iii, C-iv, D-i
(2) A-i, B-iv, C-iii, D-ii
(3) A-ii, B-iv, C-i, D-iii
(4) A-iii, B-ii, C-iv, D-i

Indian coal blocks. This concept primarily aims to:
(1) Extracting ultra-pure carbon for industrial diamond synthesis.
(2) Convert deep coal seams into combustible syngas in-situ.
(3) Engineering the safe collapse of old abandoned coal mines.
(4) Extracting natural gas trapped in shale via hydraulic fracturing.
(5) Question not attempted

61. Which of the following statements correctly highlights the significance of the KG Basin (Krishna-Godavari Basin)?
(1) Largest inland reserve of high-grade copper ore in India.
(2) Onshore basin known exclusively for high-grade coking coal.
(3) Large natural gas discoveries on India's eastern coast.
(4) Major site for primary offshore bauxite mining operations.
(5) Question not attempted

62. Match List-I with List-II and select the correct answer using the codes given below:
List I: (Natural Gas/Oil Field)
A. Mangala
B. Ravva
C. Naharkatiya
D. Hazira
List II: (Basin/Region)
i. Assam
ii. Barmer Basin
iii. Cambay Basin
iv. Krishna-Godavari Basin
Codes:
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iv, D-iii
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

63. Consider the following statements about natural gas and oil fields in Rajasthan:
I. The Barmer-Sanchor basin has emerged as a significant onshore oil and gas producing region.
II. Mangala, Bhagyam, and Aishwarya are major oil fields in this region.
III. Jaisalmer basin contains promising reserves of natural gas.
IV. The oil extracted from Rajasthan is entirely offshore.
Which of the above statements is/are correct?
(1) I, II and IV only
(2) I, III and IV only
(3) I, II and III only
(4) II, III and IV only
(5) Question not attempted

NODIA

64. The primary objective of the National Mineral Policy of India regarding conservation is to ensure:
(1) Complete cessation of all mining activities to protect forests
(2) Sustainable mining practices with a zero-waste objective and scientific exploitation
(3) Extraction of minerals at maximum speed to boost immediate export revenue
(4) Shifting of all mining operations to private foreign entities
(5) Question not attempted

65. Mineral conservation often emphasizes the recycling of scrap metals. What is the direct effect of utilizing scrap metal in industries like steel and aluminium?
(1) Increases industrial demand for raw ores to blend with scrap.
(2) Reduces energy consumption and virgin ore depletion.
(3) Results in lower quality products unsuitable for construction.
(4) Completely eliminates the requirement for fossil fuel use.
(5) Question not attempted

66. Which of the following represents the correct chronological sequence of the commercial discovery/development of major oil and gas fields in India?
(1) Mumbai High, Digboi, Mangala (Barmer), KG Basin
(2) Digboi, Mumbai High, KG Basin, Mangala (Barmer)
(3) KG Basin, Digboi, Mangala (Barmer), Mumbai High
(4) Digboi, Mangala (Barmer), Mumbai High, KG Basin
(5) Question not attempted

ANSWERS

1. (2) Ancient crystalline and metamorphic rocks
India's major metallic mineral resources are concentrated in the Peninsular region, which is geologically composed of ancient crystalline, igneous, and metamorphic rocks. These rock systems, particularly those belonging to the Dharwar and Cuddapah formations, contain significant deposits of iron ore, manganese, and copper. The stability and antiquity of the Peninsular shield provided ideal conditions for mineralisation.

2. (1) Both A and R are true and R is the correct explanation of A.
The Peninsular plateau serves as the storehouse of India's metallic mineral wealth because it consists of ancient rock formations that underwent extensive tectonic and volcanic activity. These geological processes facilitated the concentration of minerals like iron and manganese within the crust. Therefore, the specific rock composition explains why the majority of the country's mineral reserves are located here.

3. (3) Magnetite
Magnetite is a very high-quality iron ore, typically possessing a distinctive dark grey to black colour. It contains a high iron content of up to seventy percent, making it extremely valuable for industrial use. Furthermore, it exhibits superior magnetic properties, which are particularly beneficial for applications in the electrical and electronic industries during the manufacturing of various components.

4. (1) I and II only
The iron ore belt spanning Jharkhand and Odisha provides a significant portion of India's total output. Specifically, the Bailadila mines in Chhattisgarh are famous for producing high-grade hematite ore, essential for steelmaking. However, the Kudremukh deposits in Karnataka operate primarily as export-oriented units, where iron ore is transported in slurry form via a pipeline to the coast.

5. (3) Kendujhar, Mayurbhanj, and Sundargarh
Odisha is a leading producer of iron ore in India, with its high-grade hematite deposits concentrated in specific districts. The Kendujhar and Mayurbhanj districts are particularly prominent, featuring major mines like Badampahar and Gorumahisani. The Sundargarh district also contributes significantly to the state's total output, supporting the raw material requirements of various domestic steel plants and international export markets.

6. (1) A-iii, B-iv, C-i, D-ii
India's iron ore mines are strategically located across diverse geological regions. The Bailadila mines are situated in Chhattisgarh, while the Noamundi mine is a major source of iron ore in Jharkhand. Kudremukh is located in the Western Ghats of Karnataka, and Badampahar is found in Odisha. These mines are integral to the industrial supply chains of their respective regions.

7. (4) Petroleum
While metallic minerals are generally concentrated in the ancient rocks of the Peninsular shield, petroleum and natural gas are primarily found in sedimentary basins. These resources are located in the non-Peninsular geological formations, such as the alluvial tracts of Gujarat and Assam. Petroleum originates from the decomposition of organic matter trapped within sedimentary layers over millions of years.

8. (4) Statement I is incorrect but Statement II is correct
The Singhbhum district of Jharkhand is a highly mineralised zone and is not limited exclusively to iron ore extraction. It is also a significant producer of other metallic minerals, most notably copper. This district forms an integral part of the rich mineral belt that extends across the border into Odisha, making it one of the most productive mining regions.

9. (1) II, IV, III, I
Iron ores are classified by their iron content, with magnetite being the highest at approximately

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(2) The laterite soils of the coastal tracts also host bauxite deposits.
(3) Rajasthan is the largest producer of bauxite in the country.
(4) Odisha's Kalahandi and Koraput districts are major bauxite hubs.
(5) Question not attempted

74. An Environmental Impact Assessment (EIA) is mandatory before opening a new major mine. The primary application of an EIA in the mining sector is to:
(1) Predict and manage ecological and social project impacts.
(2) Calculate the precise monetary value of the mineral reserve.
(3) Determine the depth of ore veins using satellite imagery.
(4) Allocate mining shares to various foreign investor groups.
(5) Question not attempted

75. The Singhbhum district is unique because it is a highly mineralized zone producing a multitude of minerals. Besides iron ore, which other major metallic mineral is prominently mined in Singhbhum?
(1) Zinc
(2) Lead
(3) Silver
(4) Copper
(5) Question not attempted

76. In the context of mineral extraction, what is the precise definition of an "ore"?
(1) Rock formation from which a mineral is scientifically identified.
(2) Natural material from which minerals are profitably extracted.
(3) Accumulation of minerals mixed with other diverse elements.
(4) Purely refined metal extracted following a smelting process.
(5) Question not attempted

77. Which of the following is the most appropriate reason why Peninsular India is overwhelmingly rich in metallic minerals compared to the Northern Plains?
(1) Plains were heavily mined over centuries, depleting resources.
(2) Regional climate favors rapid modern mineral synthesis periods.
(3) Plateau made of ancient rocks shaped by tectonic processes.
(4) Rivers wash away all metallic ores from the Northern Plains.
(5) Question not attempted

78. Given below are two statements:
Statement I: Zawar mines are located in the Aravalli ranges near Udaipur.
Statement II: Hindustan Zinc Limited is primarily responsible for the operations and processing of ore from these mines.
Select the correct option:
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

NODIA

79. Which of the following pairs of mineral processing terminology is incorrectly matched?
(1) Placer Mining – Underground excavation of deep horizontal tunnels to extract coal
(2) Beneficiation – Improving the economic value of the ore by removing gangue
(3) Smelting – Extracting metal from its ore by a process involving heating and melting
(4) Open-cast mining – Extracting minerals near the surface without extensive tunneling
(5) Question not attempted

80. The National Mineral Policy 2019 lays special emphasis on which of the following core areas to ensure sustainable development?
(1) Granting permanent leases to foreign multinational groups.
(2) Implementation of the 'Inter-Generational Equity' concept.
(3) Banning the export of all value-added mineral products.
(4) Shifting minor mineral taxation to the Central Government.
(5) Question not attempted

(5) Question not attempted

53. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Petroleum deposits in India are predominantly found in the sedimentary basins.
Reason (R): Petroleum is formed from the decomposition of organic matter trapped within sedimentary rock layers over millions of years.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

54. Consider the following statements regarding major coalfields in India:
I. Jharia is the largest coalfield in India and is known for prime coking coal.
II. Raniganj coalfield is located primarily in West Bengal.
III. Korba coalfield is situated in the state of Chhattisgarh.
IV. Singrauli coalfield spans across the border of Madhya Pradesh and Uttar Pradesh.
V. All these major coalfields belong exclusively to the Tertiary geological period.
Which of the above statements is/are correct?
(1) I, II, III and V only
(2) I, II, III and IV only
(3) II, III, IV and V only
(4) I, III, IV and V only
(5) Question not attempted

55. Which of the following statements regarding the Singrauli and Korba coalfields is incorrect?
(1) Singrauli is heavily utilized for pit-head thermal power generation by NTPC.
(2) Both coalfields are part of the Gondwana rock system.
(3) Both coalfields lie in the central-eastern belt of peninsular India.
(4) Korba coalfield is primarily known for producing high-grade anthracite coal.
(5) Question not attempted

56. Which of the following pairs of oil fields and their classification is correctly matched?
(1) Bassein (Vasai) – Offshore field
(2) Mumbai High – Onshore field
(3) Digboi – Offshore field
(4) Ankleshwar – Offshore field
(5) Question not attempted

57. Given below are two statements:
Statement I: The Mumbai High oil field was discovered by the Oil and Natural Gas Corporation (ONGC) in the 1970s.
Statement II: Extraction at Mumbai High is carried out using a specially designed offshore drilling platform known as Sagar Samrat.
Select the correct option:
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

58. Consider the following statements about Digboi:
I. It is situated in the state of Assam.
II. It holds the distinction of being India's oldest operational oil well.
III. It represents a major offshore oil field in the Bay of Bengal.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

59. The Bombay Offshore basin, which houses Mumbai High, accounts for the highest production of which two resources in India?
(1) Coal and Lignite
(2) Iron Ore and Manganese
(3) Bauxite and Copper
(4) Petroleum and Natural Gas
(5) Question not attempted

60. The application of underground coal gasification (UCG) technology is being explored in several

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seventy percent. Hematite follows with an iron content ranging between fifty and sixty percent. Limonite is a lower-grade ore, containing about forty to sixty percent iron, often in a hydrated form. Siderite is the lowest quality, typically containing less than forty percent iron content.

10. (1) Khetri
Bailadila, Kudremukh, and Singhbhum are all major hubs for iron ore mining in India, contributing significantly to the steel industry and exports. In contrast, Khetri is primarily famous for its copper deposits and long-standing history of copper extraction. Therefore, it stands out from the other locations, which are predominantly associated with the production and processing of iron ore.

11. (4) Madhya Pradesh
Madhya Pradesh is a leading state in the production of manganese ore in India. The Balaghat mines in this state are particularly renowned, contributing a significant percentage of the country's total manganese output. Manganese is an essential raw material used in the iron and steel industry, and these mines play a crucial role in meeting domestic and international industrial demands.

12. (2) I, II and III only
India faces a deficiency in copper reserves and production, requiring significant imports to meet domestic demand. The Balaghat mines in Madhya Pradesh and the Khetri belt in Rajasthan are the primary producers. Additionally, the Singhbhum district in Jharkhand contributes to the total output. Despite these major mining operations, the country is not self-sufficient and does not export copper extensively.

13. (3) Steel and ferro-alloys
Manganese is a critical mineral primarily utilised in the iron and steel industry. It acts as a deoxidizing and desulphurizing agent during the steelmaking process, helping to remove impurities. Furthermore, it is essential for the production of ferro-manganese and other ferro-alloys, which provide hardness and durability to steel products used in construction, machinery, and various industrial manufacturing sectors.

14. (1) Both A and R are true and R is the correct explanation of A.
Manganese is an essential component in the manufacturing of steel because it serves as a vital hardening agent and removes impurities like oxygen and sulphur. Approximately ten kilograms of manganese are consumed for every tonne of steel produced. This specific requirement demonstrates why the mineral is indispensable, directly justifying its critical role within the broader iron and steel industrial framework.

15. (1) A-iii, B-iv, C-i, D-ii
Major mineral deposits in India are distributed across specific regions. Malanjkhand is a key site for copper in Madhya Pradesh, while the Nagpur-Bhandara belt is prominent for manganese. Bailadila is one of the most significant iron ore mines in Chhattisgarh. Panchpatmali in Odisha is known for its massive bauxite deposits, which are essential for the production of aluminium metal.

16. (2) Ore is transported by rail to the east for domestic steel plants.
The Kudremukh iron ore mines operate as a dedicated export unit located in the Western Ghats of Karnataka. The ore is not transported by rail to eastern domestic plants; instead, it is moved as slurry through a specialized pipeline to the port at Mangaluru. This efficient transportation method facilitates direct international shipping from the western coast to global markets for processing.

17. (2) High electrical conductivity and ductility
The Malanjkhand deposits in Madhya Pradesh are a primary source of copper, which is highly valued for its exceptional electrical conductivity and ductility. These properties make copper indispensable in the electrical industry for manufacturing wires, cables, and electronic components. Its ability to be drawn into thin wires while maintaining conductivity is essential for efficient power transmission and modern technological infrastructure.

18. (4) IV only
Manganese is widely associated with the Dharwar system and is crucial for various industries, including the production of bleaching powder and insecticides. While Odisha is a leading

producer and Maharashtra has significant deposits in Nagpur, Singhbhum is not the sole extractor in eastern India. Other regions also contribute to manganese production, making the claim of exclusive responsibility in that area incorrect.

19. (3) Jhunjhunu
The Khetri copper complex is one of India's oldest and most significant copper mining areas. It is located in the Jhunjhunu district of Rajasthan, situated along the northern part of the Aravalli range. This complex includes several mines and a smelting facility, playing a central role in the domestic production of copper, which is essential for various industrial and electrical applications.

20. (4) Khetri – Rajasthan
The Khetri copper belt is located in Rajasthan and remains a primary center for copper extraction in India. Other pairings are incorrect; Malanjkhand is in Madhya Pradesh, and the Ghatsila mines are situated in Jharkhand. These regions are geologically significant because they host the major copper reserves required for the country's electrical and manufacturing sectors, despite India's overall resource scarcity.

21. (3) Lead and Zinc
The Zawar mines near Udaipur in Rajasthan are among the oldest and most famous mining sites in the world. They are globally recognized for the historic and modern extraction of lead and zinc ores. These mines contain polymetallic deposits where lead and zinc are typically found together, along with silver as a valuable by-product recovered during the metal refining process.

22. (2) A-ii, B-i, C-iii, D-ii
Odisha is the dominant producer of both bauxite and chromite in India. Rajasthan holds a near monopoly on the production of zinc, particularly from the Zawar mines. Karnataka is the primary state for gold mining, housing both the Kolar and Hutti gold fields. These states contribute significantly to the national output of these metallic minerals based on their unique geology.

23. (4) Odisha
Odisha maintains a leading position in India's mineral sector, particularly for bauxite production and reserves. It accounts for more than half of the country's total bauxite output, with major deposits located in the Kalahandi and Koraput districts. The state's vast resources support large-scale aluminium refineries, making it the most critical region for the domestic aluminium industry and related manufacturing sectors.

24. (3) III only
Lead and zinc are often found together in polymetallic ores, and Rajasthan accounts for the vast majority of their production in India. However, the mineralogical classification is reversed; Galena is the primary ore for lead, while Sphalerite is the major ore for zinc. This distinction is critical for metallurgical processes, as each ore requires specific smelting techniques to extract the metals.

25. (3) The electrolytic process of smelting aluminium is extremely energy-intensive.
Aluminium production requires the extraction of alumina from bauxite, followed by an electrolytic smelting process. This second stage consumes a massive amount of electricity, which accounts for a significant portion of the total production cost. Consequently, smelters are strategically located in regions offering cheap and reliable power, as it is more cost-effective to transport alumina to electricity than vice versa.

26. (3) Statement I is correct but Statement II is incorrect
The Kolar Gold Fields and Hutti mines are the primary sources of gold in India, both located in Karnataka. However, mining in the Kolar Gold Fields was notoriously difficult and expensive because the ore veins were located at extreme depths. These deep mining operations faced high costs and technical challenges, ultimately leading to the suspension of commercial extraction in many areas.

27. (1) Odisha, Gujarat, Jharkhand
Odisha is consistently the largest producer of bauxite in India, followed by Gujarat and Jharkhand. These three states contain the bulk of the country's bauxite reserves, which are typically found in plateau regions and lateritic soils. The distribution of these deposits is crucial for the domestic aluminium industry, with Odisha providing the highest output to support large-scale industrial smelting operations.

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28. (2) Zawar – Rajasthan
While Zawar is a famous mining site in Rajasthan, it is renowned for lead and zinc extraction rather than gold. Kolar and Hutti in Karnataka are the primary gold-producing areas in India. Ramgiri in Andhra Pradesh also contains known gold deposits. Therefore, associating Zawar with gold mining is incorrect, as its geological significance lies in the production of polymetallic base metals.

29. (1) I, II and IV only
Bauxite forms through the weathering of rocks rich in aluminium silicates. Significant deposits are found in Odisha's Koraput district and the Amarkantak plateau. However, bauxite is not used to manufacture steel; it is the primary ore for producing aluminium. This metal is valued for its strength, light weight, and conductivity, making it distinct from iron ore used in steel production.

30. (4) Platinum
The polymetallic ores found in the Zawar mines primarily contain lead and zinc. During the metallurgical refining process, several valuable by-products are recovered, including silver and cadmium. Occasionally, cobalt is also extracted. Platinum is not typically associated with these specific ore bodies in India. Its extraction occurs in entirely different geological environments, making it the odd one out in this context.

31. (1) Chromite
The Sukinda Valley in Odisha is globally significant because it contains nearly ninety-five percent of India's chromite reserves. Chromite is an essential mineral used in the production of stainless steel and various chemical industries. The valley's high concentration of this mineral makes Odisha the dominant producer, supporting both domestic metallurgical requirements and international trade through the export of high-grade ore.

32. (1) Both A and R are true and R is the correct explanation of A.
Limestone is the fundamental raw material used in the cement industry. It provides the necessary calcium carbonate that is processed at high temperatures to create cement clinker. Because of this essential role, cement manufacturing plants are consistently located near large limestone deposits to ensure a steady supply. The geological presence of limestone thus directly dictates the location and feasibility of cement production.

33. (2) High di-electric strength and resistance to high voltage
Mica is highly valued in the electrical and electronic industries due to its unique physical and chemical properties. It possesses excellent dielectric strength, low power loss, and a high resistance to high voltage. These characteristics allow mica to function as an effective insulator in various components like capacitors and high-pressure steam boilers, where maintaining electrical stability under thermal stress is critical.

34. (1) A-iv, B-ii, C-iii, D-i
Non-metallic minerals serve specific industrial functions. Limestone is used for manufacturing cement clinker. Mica provides essential electrical insulation for high-voltage equipment. Rock phosphate is a primary ingredient in the production of superphosphate fertilizers. Gypsum is used in making Plaster of Paris and acts as a retarder in cement to control the setting time, ensuring the material remains workable during construction.

35. (3) Metallurgical use for stainless steel and refractory bricks.
Chromite deposits in Odisha are of immense industrial importance primarily due to their metallurgical applications. The mineral is used to produce ferro-chrome, which is essential for manufacturing stainless steel and other corrosion-resistant alloys. Additionally, chromite is used to make refractory bricks that line high-temperature furnaces, demonstrating its critical role in heavy industry and the metallurgical processing of various metallic products.

36. (1) I, II, III and V only
India is a prominent producer and exporter of sheet mica. Leading regions include the Koderma belt in Jharkhand, the Nellore belt in Andhra Pradesh, and areas around Ajmer in Rajasthan. Mica occurs as thin sheets within igneous and metamorphic rocks, not as massive sedimentary blocks. Its ease of splitting into very thin, flexible layers is a key physical characteristic for industrial use.

NODIA

(1) Due to its heavy concentration of iron and steel plants resembling Manchester
(2) Due to its temperate climate which is identical to that of Manchester
(3) Due to its emergence as a major hub for the cotton textile industry
(4) Due to its architectural similarities with the British city
(5) Question not attempted

14. Identify the incorrect statement regarding the Ahmedabad-Baroda industrial region.
(1) The discovery of oil fields at Ankleshwar provided a massive boost to petrochemical industries here
(2) The decline of the cotton textile industry in Mumbai favored the growth of textiles in Ahmedabad
(3) Vadodara has emerged as a major center for the petrochemicals and fertilizer industry
(4) The region lacks an inland port, making it entirely dependent on Mumbai for exports
(5) Question not attempted

15. Match the industrial centers with their respective specialties or industries in the Gujarat industrial belt:
List I: Industrial Center
A. Surat
B. Koyali
C. Anand
D. Ahmedabad
List II: Specialty/Industry
i. Dairy Industry
ii. Diamond Cutting and Polishing
iii. Oil Refinery
iv. Cotton Textiles
(1) A-ii, B-iii, C-i, D-iv
(2) A-iii, B-ii, C-iv, D-i
(3) A-ii, B-i, C-iii, D-iv
(4) A-i, B-iv, C-ii, D-iii
(5) Question not attempted

16. In the context of industrial clusters in the Ahmedabad-Baroda region, which of the following best defines an 'industrial cluster'?
(1) A strictly government-owned complex producing defense equipment
(2) A geographical grouping of related firms, suppliers, and supporting institutions
(3) A free trade zone dedicated solely to software exports
(4) An agricultural zone converted into a heavy engineering site
(5) Question not attempted

17. The Chota Nagpur industrial region is primarily famous for the concentration of which of the following types of industries?
(1) Cotton and Jute Textiles
(2) Heavy Metallurgical and Mineral-based industries
(3) Information Technology and Electronics
(4) Marine and Agro-based industries
(5) Question not attempted

18. Consider the following industrial plants and locations:
I. Bokaro Steel Plant
II. Jamshedpur Tata Iron and Steel
III. Heavy Engineering Corporation, Ranchi
IV. Sindri Fertilizer Plant
V. Rourkela Steel Plant
Which of the given combinations lists the facilities associated with the extended Chota Nagpur industrial region?
(1) I, II, III, IV, and V
(2) I, II, III, and IV only
(3) II, III, IV, and V only
(4) I, II, IV, and V only
(5) Question not attempted

19. What is the primary cause for the establishment of the Heavy Engineering Corporation at Ranchi within the Chota Nagpur industrial region?
(1) The availability of a large seaport nearby for export
(2) The exceptionally favorable climate for precision electronics
(3) The need to supply machinery to the local steel plants and mines
(4) The abundance of raw cotton in the nearby districts
(5) Question not attempted

20. Identify the incorrect pair regarding the Chota Nagpur industrial region:
(1) Jharia - Coal mining
(2) Hazaribagh - Mica extraction
(3) Jamshedpur - Iron and Steel
(4) Sindri - Petrochemicals and crude oil refining

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46. (4) Makum
Jharia, Raniganj, and Singrauli are major coalfields belonging to the Gondwana geological period, which accounts for the bulk of India's coal production. Makum, located in Assam, is a Tertiary coalfield. Tertiary coal is geologically much younger and generally contains more moisture and sulphur compared to the older Gondwana coal. This distinction is based on the different eras of carboniferous deposition in India.

47. (1) II, IV, I, III
Coal formation begins with peat, which is the earliest stage with low carbon content and high moisture. Over geological time and under pressure, it transforms into lignite, often called brown coal. Further compression results in bituminous coal, the most common industrial variety. The final and most advanced stage is anthracite, which has the highest carbon content and the least impurities.

48. (2) III only
Gypsum is a hydrated calcium sulphate used extensively in the cement industry to control setting time and in making Plaster of Paris. While heating it produces Plaster of Paris, it does not convert into limestone, which is calcium carbonate. These are chemically distinct minerals with different industrial applications. Gypsum is also valued for soil reclamation in agriculture due to its chemical properties.

49. (2) They are primarily associated with the Tertiary rock formations of the Himalayas.
Gondwana coal fields are found in the Peninsular region, specifically within the river valleys of the Damodar, Mahanadi, Godavari, and Wardha. They contain high-quality bituminous coal and represent the vast majority of India's coal reserves. They are not associated with Tertiary formations or the Himalayas; Tertiary coal is much younger and occurs in states like Assam, Meghalaya, and Tamil Nadu.

50. (1) Rock Phosphate
The Jhamarkotra mines in Rajasthan are critical for India's agricultural sector as they are the primary source of rock phosphate. This mineral is the essential raw material required to manufacture phosphatic fertilizers. By producing significant quantities of rock phosphate domestically, these mines help reduce the country's dependence on expensive imports, supporting food security and the domestic fertilizer manufacturing industry.

51. (3) Raniganj
Raniganj is recognized as the oldest coalfield in India, with commercial mining operations beginning as early as 1774 during the British colonial period. Located primarily in West Bengal, it played a foundational role in the industrialization of the region. It belongs to the Gondwana rock system and remains an important source of coal, although other fields like Jharia currently lead in production.

52. (1) A-iii, B-i, C-iv, D-ii
India's major coalfields are distributed across several states. Jharia, the largest source of coking coal, is in Jharkhand. Raniganj is the oldest coalfield, located in West Bengal. Singrauli spans Madhya Pradesh and Uttar Pradesh, serving many power plants. Korba is a vital coal-producing region in Chhattisgarh. These Gondwana coalfields are essential for meeting the country's massive thermal energy and metallurgical needs.

53. (1) Both A and R are true and R is the correct explanation of A.
Petroleum is predominantly found in sedimentary basins because its formation depends on the accumulation and burial of organic matter, such as plankton and algae, in marine environments. Over millions of years, heat and pressure within these sedimentary layers convert the organic material into hydrocarbons. Therefore, the geological nature of sedimentary rocks provides the necessary conditions for the generation and entrapment of petroleum.

54. (2) I, II, III and IV only
Jharia, Raniganj, Korba, and Singrauli are major coalfields that contribute significantly to India's energy and industrial sectors. Jharia is particularly known for its high-grade coking coal. However, these coalfields belong to the Gondwana geological system, not the Tertiary period. Gondwana coal is much older and of higher quality compared to the younger Tertiary coal found in regions like Assam and Tamil Nadu.

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72. (1) A-iii, B-iv, C-i, D-ii
India's diverse mineral resources are found in specific iconic mines. Noamundi is a major source of iron ore in the Jharkhand-Odisha belt. Jharia is the largest and most famous coalfield in Jharkhand, known for coking coal. The Hutti mines in Karnataka are currently the primary source of domestic gold. Zawar in Rajasthan is a globally significant site for the extraction of lead and zinc.

73. (3) Rajasthan is the largest producer of bauxite in the country.
Bauxite is primarily found in the plateau regions and hill ranges of peninsular India, including laterite soils. Odisha is the leading producer, accounting for over half of the national output, with major hubs in Kalahandi and Koraput. While Rajasthan has many minerals, it is not the largest producer of bauxite. That position is firmly held by Odisha due to its extensive reserves.

74. (1) Predict and manage ecological and social project impacts.
An Environmental Impact Assessment is a critical regulatory tool used to evaluate the potential environmental and social consequences of a proposed mining project. It identifies risks such as habitat destruction, water contamination, and community displacement. By predicting these impacts before mining begins, authorities can mandate mitigation measures, ensuring that mineral extraction is conducted in a manner that minimizes harm to the environment and society.

75. (4) Copper
The Singhbhum district in Jharkhand is renowned for its diverse mineral wealth. While it is a major producer of iron ore, it is also famous for the Singhbhum Copper Belt. This region houses several important copper mines and processing facilities. The presence of both iron and copper in the same district highlights the intense mineralisation of the ancient rocks forming the Chotanagpur plateau.

76. (2) Natural material from which minerals are profitably extracted.
In the context of mining, an "ore" is defined as a naturally occurring solid material from which a metal or valuable mineral can be extracted at a profit. It contains the desired mineral mixed with other substances called gangue. The economic feasibility of extraction, influenced by the concentration of the mineral and current technology, is what distinguishes an ore from a regular rock formation.

77. (3) Plateau made of ancient rocks shaped by tectonic processes.
Peninsular India is exceptionally rich in metallic minerals because it is a stable shield composed of ancient crystalline and metamorphic rocks. These formations underwent multiple phases of volcanic activity and tectonic deformation over billions of years, which concentrated metallic elements into viable ore deposits. In contrast, the Northern Plains are composed of recent alluvial deposits that have not undergone similar deep-seated mineralisation processes.

78. (1) Both Statement I and Statement II are correct
The Zawar mines are located within the Aravalli ranges near Udaipur, Rajasthan, and represent one of India's most significant polymetallic mineral deposits. The operations at these mines, including the extraction and subsequent processing of lead and zinc ores, are managed by Hindustan Zinc Limited. This partnership between geological resources and industrial management has made Zawar a central hub for India's base metal production.

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79. (1) Placer Mining – Underground excavation of deep horizontal tunnels to extract coal
Placer mining involves the extraction of minerals from alluvial deposits, such as gold found in river sands, using gravity separation. It is not an underground coal mining technique. Other terms are correctly matched: beneficiation improves ore value, smelting extracts metal through heat, and open-cast mining involves surface extraction. The incorrect pairing highlights the difference between surface-based alluvial mining and deep-seated underground tunnel mining.

80. (2) Implementation of the 'Inter-Generational Equity' concept.
The National Mineral Policy 2019 emphasizes sustainable development through the concept of 'Inter-Generational Equity.' This principle asserts that minerals are a shared inheritance and should be managed to ensure that current extraction does not deprive future generations of their benefits. It

64. (2) Sustainable mining practices with a zero-waste objective and scientific exploitation
The National Mineral Policy emphasizes the conservation of mineral resources through scientific and sustainable exploitation. The primary goal is to ensure that minerals are extracted efficiently to minimize waste and environmental damage. This includes adopting modern technologies for better recovery and promoting the 'zero-waste' concept, ensuring that mineral wealth is managed responsibly for the benefit of both the current and future generations.

65. (2) Reduces energy consumption and virgin ore depletion.
Utilizing scrap metal in industrial production significantly conserves natural resources by reducing the need to extract and process virgin ores. Recycling metals like steel and aluminium is also far less energy-intensive than primary production from raw minerals. This practice lowers the overall environmental footprint of the manufacturing sector, decreases greenhouse gas emissions, and extends the lifespan of the country's finite mineral reserves.

66. (2) Digboi, Mumbai High, KG Basin, Mangala (Barmer)
The history of oil discovery in India began with Digboi in Assam during the late 1800s. Decades later, the major offshore field at Mumbai High was developed in the 1970s. This was followed by significant natural gas discoveries in the Krishna-Godavari Basin. More recently, the Mangala field in Rajasthan's Barmer Basin was brought into commercial production, representing a major onshore success.

67. (3) Unregulated artisanal rat-hole mining
Sustainable mineral use involves scientific methods, recycling, and substituting scarce minerals with more abundant alternatives. In contrast, unregulated rat-hole mining is a dangerous and unscientific practice that leads to severe environmental degradation, including water pollution and land subsidence. It also poses significant safety risks to miners and results in the inefficient extraction of resources, which contradicts the core principles of mineral conservation.

68. (3) I, II, III and IV only
Sustainable mineral management faces several challenges, including environmental impacts like deforestation and the technical complexity of mine reclamation. Unscientific mining methods and the high carbon footprint of extraction processes also hinder sustainability. However, sustainable mining does not focus purely on immediate economic gains; instead, it requires balancing economic benefits with environmental protection and social responsibility to ensure long-term resource availability.

69. (3) Statement I is correct but Statement II is incorrect
The discovery of oil and gas in the Barmer basin has significantly boosted the economy of western Rajasthan by creating jobs and infrastructure. However, the management of these fields involves collaboration between the Central Government, the State Government, and private companies through production sharing contracts. It is not an exclusive operation of the State Government, as national energy security and private investment are involved.

70. (2) Depletion of high-grade ores – Upgrading technology to process low-grade ores economically
A major challenge in the mineral sector is the gradual depletion of high-quality ore deposits. To mitigate this, industries must adopt advanced beneficiation and processing technologies that allow for the economic utilization of low-grade ores. This strategy helps extend the life of existing mineral reserves and ensures a stable supply of raw materials, which is a key component of sustainable mineral conservation.

71. (4) Indus Valley Civilization
The Khetri copper belt in Rajasthan has a long history of human interaction, with archaeological evidence suggesting that copper mining and smelting activities occurred there during the Indus Valley Civilization. Artifacts from sites like Ganeshwar indicate that this region was a primary source of copper for ancient peoples. This historical continuity highlights the enduring geological and economic importance of the Aravalli range's mineral wealth.

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CHAPTER 14
Major Industrial Regions of India

1. Which of the following best defines a footloose industry in the context of industrial location factors?
(1) An industry that is highly dependent on heavy, weight-losing raw materials
(2) An industry that can be located in diverse locations without transportation cost penalties
(3) An industry that must be located strictly near the final consumer market
(4) An industry characterized by a high degree of labor unionization
(5) Question not attempted

2. Consider the following statements regarding the factors of industrial location in India:
Statement I: The iron and steel industry in India is predominantly raw material-oriented.
Statement II: The cotton textile industry is highly market-oriented and independent of the source of raw cotton due to the non-weight-losing nature of the material.
Which of the following is correct?
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

3. What is the primary cause for the emergence of agglomeration economies in an industrial region?
(1) Government subsidies provided for setting up industries in backward areas
(2) Strict environmental regulations forcing industries to locate in a single demarcated zone
(3) The clustering of interconnected firms sharing infrastructure and labor pools
(4) The presence of a single large multinational corporation monopolizing the local resources
(5) Question not attempted

4. Identify the odd one out among the geographical factors affecting industrial location in India.
(1) Topography
(2) Climate
(3) Proximity to water resources
(4) Government policies
(5) Question not attempted

5. Match the industrial centres with their respective major industries in the Mumbai-Pune industrial region:
List I: Industrial Centre
A. Trombay
B. Pimpri
C. Tarapur
D. Mumbai
List II: Major Industry
i. Antibiotics
ii. Nuclear Power
iii. Cotton Textiles
iv. Petrochemicals
(1) A-i, B-ii, C-iv, D-iii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-iii, C-i, D-iv
(5) Question not attempted

Which of the following statements correctly highlights the historical significance of the Mumbai-Pune industrial region?
(1) The region developed primarily due to the discovery of massive coal reserves in the Western Ghats
(2) The opening of the Suez Canal in 1869 significantly accelerated the growth of this industrial region
(3) The region was initially developed to support the British tea trade

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advocates for responsible mining, environmental protection, and the creation of funds to support long-term socio-economic stability beyond the life of the mines.

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37. (3) Digboi region
Koderma, Nellore, and Bhilwara are all recognized as significant mica-producing regions in India, each contributing to the country's status as a major exporter of high-quality sheet mica. Digboi, however, is famous as India's oldest oil field and is located in the sedimentary basin of Assam. It is associated with petroleum production rather than the mining of non-metallic minerals like mica.

38. (2) Weight-losing, bulky raw material
Limestone is a bulky, weight-losing raw material, meaning that the final product, cement, weighs significantly less than the original mineral used. Transporting large quantities of limestone over long distances is expensive and inefficient. Therefore, cement plants are strategically established near limestone quarries to minimize transportation costs, ensuring that the industrial process remains economically viable while supplying markets with the processed final product.

39. (3) Statement I is correct but Statement II is incorrect
Limestone is primarily found in association with sedimentary rocks composed of calcium carbonates or a mixture of calcium and magnesium carbonates. It is not strictly limited to the igneous rock formations of the Peninsular plateau. In fact, limestone deposits are widely distributed across various geological sequences in India, including the Cuddapah and Vindhyan systems, which are fundamental to the cement industry.

40. (1) Koderma – Jharkhand
The Koderma district in Jharkhand is world-renowned for its high-quality mica deposits and is often referred to as a leading producer in the country. Other mica belts are also significant, such as Nellore in Andhra Pradesh and the Ajmer-Bhilwara region in Rajasthan. These areas provide the bulk of the mica used in the electrical industry and for export in sheet form.

41. (3) Bikaner
Rajasthan is the leading producer of gypsum in India, which is an essential mineral for the cement and fertilizer industries. Within the state, the Bikaner district contains the largest and most significant deposits of gypsum. These reserves support various industrial applications, including the manufacture of Plaster of Paris and the reclamation of alkaline soils in the agricultural regions of Northwest India.

42. (1) I and II only
Rock phosphate is a vital raw material for the production of phosphatic fertilizers, which are essential for modern agriculture. The Jhamarkotra mines in the Udaipur district of Rajasthan house the largest and most important rock phosphate deposits in India. It is not found in coastal alluvial tracts; instead, its occurrence is associated with specific geological formations in Rajasthan, Madhya Pradesh, and Uttarakhand.

43. (4) Gypsum acts as a soil amendment to reclaim alkaline and saline soils.
In the semi-arid regions of Rajasthan and Punjab, soil salinity and alkalinity often hinder agricultural productivity. Gypsum is applied as a soil amendment because it reacts with excess sodium in the soil, improving soil structure and drainage. This chemical process helps to reclaim degraded land, making it suitable for growing various crops by neutralizing the harmful effects of high salt concentrations.

44. (1) A-ii, B-iii, C-iv, D-i
Rajasthan features several major mineral districts. Jhamarkotra in Udaipur is the primary source of rock phosphate. Bikaner is the leading district for gypsum production. Khetri in the Jhunjhunu district is a historic and modern hub for copper mining. The Zawar mines, also located in Udaipur, are the country's most significant source of lead and zinc, typically found in polymetallic ores.

45. (3) Gondwana coal is older metallurgical grade; Tertiary is younger lignite.
Gondwana coal formations are approximately 200 million years old and provide the majority of India's high-quality metallurgical coal, mostly found in Peninsular river valleys. In contrast, Tertiary coal is much younger, dating back about 55 million years. This younger coal is primarily lignite or low-grade bituminous coal, commonly found in the northeastern states and coastal regions like Tamil Nadu and Gujarat.

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(4) The industrial growth of this region was initiated by the establishment of heavy engineering plants in the 18th century
(5) Question not attempted

7. The rapid industrial expansion of the Mumbai-Pune region in the post-independence era was significantly driven by the development of which specific industry at Bombay High?
(1) Information Technology
(2) Iron and Steel
(3) Jute Processing
(4) Petroleum and Petrochemicals
(5) Question not attempted

8. Consider the following statements regarding the Mumbai-Pune industrial region:
I. It extends from Mumbai to Pune, encompassing districts like Thane and Nashik.
II. Hydroelectricity from the Western Ghats played a vital role in its early development.
III. It is completely devoid of the engineering and automobile industries.
Which of the given combinations of statements is correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

9. Which of the following is NOT a primary geographical advantage that facilitated the growth of the Hugli industrial region in West Bengal?
(1) Availability of abundant water from the Hugli River for processing
(2) Proximity to the coalfields of the Damodar Valley
(3) Massive local reserves of copper and bauxite
(4) Cheap water transport network provided by the river and its distributaries
(5) Question not attempted

10. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): The Hugli industrial region has experienced a relative decline in its industrial dominance in recent decades.
Reason (R): The partition of India in 1947 separated the major jute-producing areas from the jute mills located along the Hugli river.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

11. Consider the following statements about the Hugli industrial region:
Statement I: Kolkata-Haora forms the core of the Hugli industrial region.
Statement II: The region predominantly specializes in the automobile and aircraft manufacturing sectors.
Which of the following is correct?
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

12. Consider the following statements regarding the characteristics of the Hugli industrial region:
I. It is the oldest industrial region in India.
II. It is characterized by a high concentration of jute mills.
III. Cheap labor was historically drawn from heavily populated states like Bihar and Uttar Pradesh.
IV. The region has completely shifted away from traditional industries to exclusive IT hubs.
Which of the given combinations of statements is correct?
(1) I, II, and IV only
(2) I, II, and III only
(3) II, III, and IV only
(4) I, III, and IV only
(5) Question not attempted

13. Which of the following is the most appropriate reason why Ahmedabad is historically referred to as the 'Manchester of India'?

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55. (4) Korba coalfield is primarily known for producing high-grade anthracite coal.
Both Singrauli and Korba are major Gondwana coalfields located in the central-eastern belt of India. Singrauli is well-known for hosting large pit-head thermal power stations. However, Korba does not produce high-grade anthracite coal; like most Gondwana fields, it produces bituminous coal. Anthracite is very rare in India, with limited occurrences found only in parts of Jammu and Kashmir.

56. (1) Bassein (Vasai) – Offshore field
Bassein, also known as Vasai, is a major offshore oil and gas field located in the Arabian Sea, near Mumbai. Mumbai High is also an offshore field, while Digboi and Ankleshwar are onshore oil fields situated in Assam and Gujarat, respectively. Distinguishing between onshore and offshore fields is important for understanding the different technologies and costs involved in petroleum extraction.

57. (1) Both Statement I and Statement II are correct
Mumbai High is India's most productive offshore oil field, discovered by the Oil and Natural Gas Corporation in the 1970s. It is situated in the Arabian Sea. To extract oil from the seabed, a specialized offshore drilling platform named Sagar Samrat was commissioned. This platform remains an iconic symbol of India's efforts to achieve energy security through the development of offshore hydrocarbon resources.

58. (1) I and II only
Digboi is located in the Tinsukia district of Assam and is historically significant as the site of the first commercial oil discovery in India during the late 19th century. It remains an operational onshore oil field, housing one of the world's oldest refineries. It is not an offshore field in the Bay of Bengal; such offshore operations are located elsewhere, such as the Krishna-Godavari basin.

59. (4) Petroleum and Natural Gas
The Bombay Offshore basin, which includes the massive Mumbai High and Bassein fields, is the most productive region for hydrocarbons in India. It accounts for the largest share of the country's domestic production of both petroleum and natural gas. These resources are extracted from beneath the seabed and transported via pipelines to refineries and industrial centers on the mainland for further processing.

60. (2) Convert deep coal seams into combustible syngas in-situ.
Underground coal gasification is a technology designed to extract energy from coal seams that are too deep or difficult to mine using conventional methods. The process involves injecting oxidants to partially combust the coal underground, converting it into a mixture of gases known as syngas. This gas is then brought to the surface to be used for power generation or chemical manufacturing.

61. (3) Large natural gas discoveries on India's eastern coast.
The Krishna-Godavari Basin, located on the eastern coast of India, gained immense prominence due to the discovery of massive natural gas reserves in its deep-water blocks. These findings significantly boosted India's domestic energy production. The basin is a critical hub for the natural gas industry, supporting power plants, fertilizer units, and the city gas distribution networks across many parts of the country.

62. (1) A-ii, B-iv, C-i, D-iii
India's hydrocarbon fields are located in various geological basins. Mangala is a major onshore oil field in the Barmer Basin of Rajasthan. Ravva is situated in the Krishna-Godavari Basin on the east coast. Naharkatiya is one of the oldest oil-producing areas in Assam. Hazira, located in the Cambay Basin of Gujarat, is a key terminal for processing and distributing natural gas.

63. (3) I, II and III only
The Barmer-Sanchor basin in western Rajasthan has become a major onshore oil and gas producing region, featuring prominent fields like Mangala, Bhagyam, and Aishwarya. Additionally, the Jaisalmer basin is known for its natural gas reserves. However, these are all onshore operations located in the desert landscape, contradicting the idea that Rajasthan's oil extraction is offshore, which typically refers to marine environments.

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(5) Question not attempted

21. Which historical hydroelectric project acted as a major catalyst for the early industrial development of the Bangalore-Chennai industrial region?
(1) Bhakra Nangal Project
(2) Damodar Valley Corporation
(3) Pykara Hydroelectric Plant
(4) Hirakud Dam Project
(5) Question not attempted

22. Select the correct order of the following major IT and industrial hubs of the Bangalore-Chennai industrial region from North to South:
(1) Chennai, Bangalore, Coimbatore, Madurai
(2) Bangalore, Chennai, Madurai, Coimbatore
(3) Bangalore, Chennai, Coimbatore, Madurai
(4) Chennai, Coimbatore, Bangalore, Madurai
(5) Question not attempted

23. Which of the following industries is NOT traditionally associated with the core development of the Bangalore-Chennai industrial region?
(1) Aerospace and Defense
(2) Information Technology
(3) Automobile Manufacturing
(4) Jute Processing
(5) Question not attempted

24. Consider the following statements regarding the Bangalore-Chennai industrial region:
Statement I: The region witnessed rapid growth in the aircraft and machine tools industries following the establishment of HAL and HMT.
Statement II: The region relies entirely on coal imported from the Chota Nagpur plateau for its energy needs, as it lacks local hydroelectric potential.
Which of the following is correct?
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

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25. Match the industrial hubs with their respective key industries or features in the Delhi-Meerut industrial region:
List I: Industrial Hub
A. Gurugram
B. Noida
C. Meerut
D. Faridabad
List II: Key Industry/Feature
i. Sports Goods
ii. Automobiles (Maruti Suzuki)
iii. Engineering and Tractors
iv. IT and Electronics
(1) A-iv, B-ii, C-iii, D-i
(2) A-ii, B-i, C-iv, D-iii
(3) A-ii, B-iv, C-i, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

26. The Delhi-Meerut industrial region is characterized by a dominance of which type of industries?
(1) Market-oriented and footloose industries
(2) Mineral-based heavy industries
(3) Marine-based industries
(4) Forest-based paper industries
(5) Question not attempted

27. Which of the following is the most accurate statement regarding the Delhi-Meerut industrial region?
(1) It is primarily an export-oriented zone relying on coastal shipping
(2) Its development is heavily dependent on raw materials mined within the National Capital Region
(3) It is the oldest industrial region in India, established during the early 19th century
(4) It exhibits a high concentration of consumer goods industries driven by the massive local market
(5) Question not attempted

28. Consider the following statements about the Delhi-Meerut industrial region:
I. It owes its development largely to the establishment of post-independence public sector undertakings and supportive infrastructure.
II. The region is highly noted for heavy metallurgy and ship-building.

Reason (R): The primary objective of the public sector was solely to maximize financial profit, and land was cheapest in these regions.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

71. In which year was the concept of conferring 'Navratna' and 'Miniratna' status to Public Sector Enterprises introduced by the Government of India to grant them greater autonomy?
(1) 1956
(2) 1977
(3) 1991
(4) 1997
(5) Question not attempted

72. Consider the following statements regarding the changing role of the public sector post-1991:
I. The number of industries reserved for the public sector was reduced to just two (Atomic Energy and Railway operations).
II. Focus shifted to the disinvestment of government equity in non-strategic PSUs.
III. Budgetary support to loss-making PSUs was drastically increased to ensure their survival without restructuring.
IV. Professionalization of PSU management was encouraged through granting greater financial autonomy.
Which of the given combinations of statements is correct?
(1) I, II, and IV only
(2) II, III, and IV only
(3) I, II, and III only
(4) I, III, and IV only
(5) Question not attempted

73. In which of the following sectors is 100% Foreign Direct Investment (FDI) under the automatic route NOT permitted in India?
(1) Electronic Systems
(2) Automobile manufacturing
(3) Atomic Energy
(4) Roads and Highways
(5) Question not attempted

74. What is the primary cause for the high concentration of Foreign Direct Investment (FDI) in western and southern states of India like Maharashtra, Gujarat, and Karnataka?
(1) Superior infrastructure, skilled workforce, and favorable state policies
(2) Abundant local reserves of coal and iron ore
(3) Mandatory quotas fixed by the central government for regional FDI allocation
(4) Lack of domestic private enterprises in these states
(5) Question not attempted

75. Match the sectors with their respective FDI limits as per contemporary policy:
List I: Sector
A. Defense Manufacturing (Automatic Route)
B. Insurance Company
C. Multi-Brand Retail Trading
D. Lottery Business
List II: FDI Limit
i. 74%
ii. 51%
iii. Prohibited
iv. 74%
(1) A-i, B-ii, C-iv, D-iii
(2) A-iii, B-iv, C-i, D-ii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

76. Consider the following statements regarding foreign investments:
Statement I: Foreign Direct Investment (FDI) involves a lasting interest and control in an enterprise resident in another economy.
Statement II: Foreign Portfolio Investment (FPI) generally refers to short-term investments in financial assets like stocks and bonds without management control.
Which of the following is correct?
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

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iii. IT and Space Research
iv. Oil Refining
(1) A-iv, B-ii, C-iii, D-i
(2) A-i, B-iii, C-ii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

36. Which of the following industries is an exception and NOT typically characteristic of the Kollam-Thiruvananthapuram industrial region?
(1) Coir processing
(2) Cashew processing
(3) Aluminium smelting
(4) Iron and Steel smelting
(5) Question not attempted

37. What is the primary purpose of the Taj Trapezium Zone (TTZ) regulations in the Mathura-Agra-Delhi industrial corridor?
(1) To promote the establishment of heavy chemical industries near the Taj Mahal
(2) To create an exclusive Special Economic Zone for foreign direct investment in defense
(3) To protect the Taj Mahal by regulating regional emissions
(4) To demarcate the boundary between Uttar Pradesh and Haryana
(5) Question not attempted

38. Consider the following factors regarding the Mathura-Agra-Delhi corridor:
I. Presence of the Mathura Oil Refinery
II. Concentration of glass industries in Firozabad
III. High concentration of leather industries in Agra
IV. Strict environmental regulations under TTZ
V. Shift towards natural gas as an industrial fuel
Which of the given combinations of factors represents the correct characteristics and developments in this region?
(1) I, II, and III only
(2) I, II, III, IV, and V
(3) II, III, and IV only
(4) I, III, IV, and V only
(5) Question not attempted

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39. What was the cause and effect relationship that led to the widespread adoption of natural gas in the industries of the Agra-Mathura region?
(1) Cause: Abundant local discovery of natural gas; Effect: Voluntary shift by industries
(2) Cause: High cost of coal transportation; Effect: Shift to locally produced biomass gas
(3) Cause: Foreign Direct Investment conditions; Effect: Introduction of green fuels
(4) Cause: Supreme Court directives; Effect: Shift to natural gas
(5) Question not attempted

40. Identify the correct statement regarding the industries in the Mathura-Agra-Delhi corridor.
(1) Firozabad has historically been the center of India's glass and bangle industry
(2) Agra is primarily famous worldwide for its heavy electrical machinery production
(3) Mathura is recognized as the largest IT hub in Northern India
(4) The corridor operates entirely outside the purview of environmental emission norms
(5) Question not attempted

41. The Delhi-Mumbai Industrial Corridor (DMIC) is being developed in collaboration with which foreign country?
(1) United States of America
(2) France
(3) Japan
(4) Germany
(5) Question not attempted

42. Arrange the following proposed industrial nodes of the Delhi-Mumbai Industrial Corridor (DMIC) from North to South:
I. Dadri-Noida-Ghaziabad Investment Region (UP)
II. Khushkhera-Bhiwadi-Neemrana Investment Region (Rajasthan)
III. Ahmedabad-Dholera Investment Region (Gujarat)
IV. Shendra-Bidkin Industrial Park (Maharashtra)
Select the correct order:
(1) I, II, III, IV
(2) II, I, III, IV
(3) I, III, II, IV
(4) III, II, I, IV

III. It encompasses industrial nodes across Delhi, Uttar Pradesh, and Haryana.

Which of the given combinations of statements is correct?

(1) I and II only
(2) I and III only
(3) II and III only
(4) I, II, and III
(5) Question not attempted

29. The Vishakhapatnam-Guntur industrial region has developed primarily due to its proximity to which of the following?

(1) Large deposits of high-grade copper
(2) The expansive desert terrain ideal for solar parks
(3) The Krishna-Godavari delta hinterland and active ports
(4) The dense coniferous forests of the Eastern Ghats
(5) Question not attempted

30. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):

Assertion (A): The Vishakhapatnam-Guntur industrial region received a significant boost in industrialization in recent decades.

Reason (R): The discovery of coal fields in the Godavari basin and oil reserves in the Krishna-Godavari basin provided necessary energy resources.

(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

31. Identify the odd one out among the districts/nodes associated with the Vishakhapatnam-Guntur industrial region.

(1) Kurnool
(2) Rajahmundry
(3) Machilipatnam
(4) Vijayawada
(5) Question not attempted

32. Consider the following industries:

I. Shipbuilding
II. Oil Refining
III. Fertilizer manufacturing
IV. Jute textiles

Which of the given combinations correctly represents the prominent industries in the Vishakhapatnam-Guntur region?

(1) II, III, and IV only
(2) I, II, and III only
(3) I, III, and IV only
(4) I, II, III, and IV
(5) Question not attempted

33. The Kollam-Thiruvananthapuram industrial region is fundamentally based on which type of resource base?

(1) Heavy mineral and coal extraction
(2) Plantation agriculture and hydro-power
(3) Large-scale pastoral and dairy farming
(4) Crude oil extraction
(5) Question not attempted

34. Consider the following statements regarding the Kollam-Thiruvananthapuram industrial region:

Statement I: The region is devoid of large-scale heavy metallurgical industries due to a lack of metallic minerals and coal in the vicinity.

Statement II: The industrial profile of the region is dominated by coir, cashew processing, and rubber-based industries.

Which of the following is correct?

(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

35. Match the centers with their respective associated industries in the Kerala industrial region:

List I: Center

A. Punalur
B. Kochi
C. Alappuzha
D. Thiruvananthapuram

List II: Associated Industry

i. Coir Industry
ii. Paper Industry

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Turnover up to Rs. 500 crore
(5) Question not attempted

50. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): The MSME sector plays a highly crucial role in generating employment opportunities in India.
Reason (R): MSMEs are generally capital-intensive rather than labor-intensive industries.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

51. Which of the following is the best description of the significance of industrial estates for MSMEs?
(1) They ensure that all products manufactured by MSMEs are compulsorily purchased by the government
(2) They strictly limit the technological upgradation of MSMEs to protect traditional artisans
(3) They lower capital burdens by providing shared infrastructure and power
(4) They provide constitutional immunity against labor laws for large corporations
(5) Question not attempted

52. Consider the following statements about industrial clusters in India:
I. They facilitate collective bargaining for raw materials among small producers.
II. They enable a better flow of information and technological spillover.
III. The government supports them through schemes like MSE-CDP (Micro and Small Enterprises - Cluster Development Programme).
IV. They are exclusively established in metropolitan cities only.
Which of the given combinations of statements is correct?
(1) II, III, and IV only
(2) I, III, and IV only
(3) I, II, III, and IV
(4) I, II, and III only
(5) Question not attempted

53. What is the primary cause-and-effect relationship explaining the relative industrial backwardness of the North-Eastern states of India?
(1) Cause: High density of population; Effect: Shortage of agricultural land
(2) Cause: Exhaustion of local coal mines; Effect: Closure of thermal power plants
(3) Cause: Hilly topography and poor transport; Effect: High production costs
(4) Cause: Over-industrialization during the British era; Effect: Current stagnation due to obsolescence
(5) Question not attempted

54. Consider the following statements regarding the North East Industrial Development Scheme (NEIDS):
Statement I: The scheme aims to promote industrialization in the North Eastern Region by providing various financial incentives to new industrial units.
Statement II: The scheme is restricted exclusively to the public sector undertakings and bars private enterprise.
Which of the following is correct?
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

55. Match the North-Eastern states with their respective major or traditional industries:
List I: North-Eastern State
A. Assam
B. Meghalaya
C. Tripura
D. Sikkim
List II: Major/Traditional Industry
i. Pharmaceuticals and Breweries
ii. Tea Processing and Petrochemicals
iii. Bamboo and Rubber based industries
iv. Cement (Limestone based)
(1) A-i, B-ii, C-iv, D-iii

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(2) A-iv, B-iii, C-ii, D-i
(3) A-ii, B-i, C-iii, D-iv
(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

56. The Numaligarh Refinery, which plays a pivotal role in the region's industrial sector, is located in which state?
(1) Assam
(2) Arunachal Pradesh
(3) Nagaland
(4) Manipur
(5) Question not attempted

57. Identify the odd one out among the indicators typically used to measure industrial backwardness of a state in India.
(1) Per capita industrial output
(2) Proportion of industrial workers to total population
(3) High density of national highways
(4) Number of registered factories per lakh population
(5) Question not attempted

58. Consider the following factors:
I. Historical disparity induced by colonial port-centric development
II. Proximity to rich mineral belts
III. Difference in infrastructure development among states
IV. Uneven distribution of Foreign Direct Investment
V. Variations in state-level industrial policies and ease of doing business
Which of the given combinations of factors contributes significantly to industrial disparity in India?
(1) I, II, III, IV, and V
(2) I, III, IV, and V only
(3) II, III, and IV only
(4) I, II, IV, and V only
(5) Question not attempted

59. Identify the correct pair representing a committee and its core mandate related to regional industrial disparity:
(1) B. Sivaraman Committee - Nationalization of Banks
(2) Kelkar Committee - Reorganization of states on linguistic lines
(3) Rangarajan Committee - Poverty line estimation based on calorie intake only
(4) Pande Committee (1968) - Identification of backward areas for industrial incentives
(5) Question not attempted

60. The historical 'Freight Equalization Policy' adopted by the Government of India had which of the following impacts?
(1) It accelerated the industrialization of mineral-rich states like Bihar and Odisha
(2) It nullified the locational advantage of mineral-rich regions for local industry
(3) It made railway freight charges exorbitant for southern states
(4) It mandated the equal distribution of foreign direct investment across all states
(5) Question not attempted

61. In which year was the 'Make in India' initiative launched by the Government of India?
(1) 2012
(2) 2016
(3) 2014
(4) 2018
(5) Question not attempted

62. Arrange the following major industrial and economic initiatives of the Government of India in chronological order of their launch:
I. Production Linked Incentive (PLI) Scheme (broad expansion for 14 sectors)
II. Make in India
III. Special Economic Zones (SEZ) Act
IV. Startup India
Select the correct sequence:
(1) III, II, IV, I
(2) II, III, I, IV
(3) III, IV, II, I
(4) II, I, III, IV
(5) Question not attempted

63. Which of the following statements correctly identifies the primary objective of the Make in India initiative?
(1) To transform India into a manufacturing hub and increase its GDP share
(2) To completely replace all agricultural activities with heavy industries
(3) To restrict foreign companies from selling their products in the Indian market

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(4) To nationalize all major private sector manufacturing units
(5) Question not attempted

64. Consider the following statements regarding Make in India:
Statement I: Under the Make in India initiative, Foreign Direct Investment (FDI) norms were highly restricted to protect domestic MSMEs.
Statement II: The initiative initially identified 25 focus sectors, including automobiles, aviation, and biotechnology, to promote manufacturing.
Which of the following is correct?
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

65. Match the industrial policies with their key features:
List I: Industrial Policy
A. Industrial Policy Resolution, 1948
B. Industrial Policy Resolution, 1956
C. Industrial Policy Statement, 1977
D. New Industrial Policy, 1991
List II: Key Feature
i. Focus on small-scale and cottage industries
ii. Abolition of industrial licensing for most sectors
iii. Introduction of the mixed economy model
iv. Classification of industries into three schedules (A, B, C)
(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-iv, C-i, D-ii
(3) A-i, B-ii, C-iv, D-iii
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

66. The Industrial Policy Resolution of 1956 was heavily influenced by which economic planning model?
(1) Mahalanobis Model
(2) Harrod-Domar Model
(3) Gandhi-Kumarappa Model
(4) Rao-Manmohan Model
(5) Question not attempted

67. Identify the incorrect statement regarding the New Industrial Policy of 1991.
(1) It abolished the Monopolies and Restrictive Trade Practices (MRTP) limit
(2) It significantly reduced the number of industries reserved exclusively for the public sector
(3) It introduced the concept of mandatory phased manufacturing programs for all foreign companies
(4) It opened up many sectors to 100% Foreign Direct Investment (FDI)
(5) Question not attempted

68. Consider the following statements about the Industrial Policy Resolution of 1956:
I. It is often referred to as the 'Economic Constitution of India'.
II. Schedule A industries were the exclusive responsibility of the State.
III. It completely banned the existence of the private sector in India.
Which of the given combinations of statements is correct?
(1) II and III only
(2) I and III only
(3) I, II, and III
(4) I and II only
(5) Question not attempted

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69. Which of the following is NOT a mandatory criterion for a Central Public Sector Enterprise (CPSE) to be granted 'Maharatna' status?
(1) It must hold Navratna status
(2) It must be listed on an Indian stock exchange with minimum prescribed public shareholding
(3) It must be a 100% export-oriented unit with zero domestic sales
(4) It must have an average annual net profit of more than Rs. 5,000 crore during the last three years
(5) Question not attempted

70. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): During the post-independence era, Public Sector Undertakings (PSUs) were deliberately established in backward regions like Chota Nagpur and central India.

(5) Question not attempted

43. The backbone of the Delhi-Mumbai Industrial Corridor (DMIC) is aligned with which major infrastructure project?
(1) Golden Quadrilateral Highway
(2) National Waterway 1
(3) Inland River Linking Project
(4) Dedicated Freight Corridor (Western DFC)
(5) Question not attempted

44. Consider the following statements regarding industrial corridors in India:
Statement I: The Chennai-Bengaluru Industrial Corridor (CBIC) aims to achieve accelerated development and regional industry agglomeration.
Statement II: Industrial corridors are solely focused on agricultural development and completely restrict manufacturing activities.
Which of the following is correct?
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

45. Match the Special Economic Zones (SEZ) with their respective states:
List I: Major SEZ
A. SEEPZ (Santacruz)
B. Kandla
C. MEPZ (Tambaram)
D. Falta
List II: State
i. Gujarat
ii. West Bengal
iii. Maharashtra
iv. Tamil Nadu
(1) A-i, B-iii, C-ii, D-iv
(2) A-iii, B-iv, C-i, D-ii
(3) A-iii, B-i, C-iv, D-ii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

46. Which of the following is the most accurate definition of a Special Economic Zone (SEZ) in India?
(1) An agricultural zone where no industrial activity is permitted by law
(2) A designated residential area for industrial workers subsidized by the government
(3) A state-owned enterprise strictly producing defense machinery
(4) A duty-free enclave treated as foreign territory for trade operations
(5) Question not attempted

47. Identify the incorrect statement regarding the Special Economic Zones (SEZ) Act, 2005.
(1) It explicitly prohibits any Foreign Direct Investment (FDI) within the SEZ enclaves
(2) It provides for simplified procedures for the establishment and operation of SEZs
(3) It offers tax holidays and exemptions from various customs and excise duties
(4) Single window clearance mechanism is a key feature of the Act
(5) Question not attempted

48. Consider the following statements regarding the objectives of setting up Special Economic Zones (SEZs):
I. Generation of additional economic activity.
II. Promotion of exports of goods and services.
III. Restriction of domestic and foreign investment.
Which of the given combinations of statements is incorrect?
(1) I only
(2) III only
(3) II only
(4) I and II only
(5) Question not attempted

49. As per the revised classification criteria effective from 2020, what defines a 'Medium' enterprise in the MSME sector?
(1) Investment in Plant and Machinery or Equipment up to Rs. 1 crore and Annual Turnover up to Rs. 5 crore
(2) Investment up to Rs. 50 crore and Annual Turnover up to Rs. 250 crore
(3) Investment up to Rs. 10 crore and Annual Turnover up to Rs. 50 crore
(4) Investment up to Rs. 100 crore and Annual

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77. The Smart Cities Mission, which also focuses on developing robust economic infrastructure and smart industrial enclaves, was launched by the Government of India in which year?
(1) 2014
(2) 2017
(3) 2015
(4) 2019
(5) Question not attempted

78. Consider the following elements promoted under the Smart Cities Mission:
I. Adequate water supply
II. Assured electricity supply
III. Robust IT connectivity and digitalization
IV. E-Governance and citizen participation
V. Complete prohibition of manufacturing activities
Which of the given combinations represents the core infrastructure elements promoted under the Smart Cities Mission?
(1) II, III, IV, and V only
(2) I, III, IV, and V only
(3) I, II, III, IV, and V
(4) I, II, III, and IV only
(5) Question not attempted

79. What is the primary cause-and-effect relationship between a Special Economic Zone (SEZ) and an Industrial Township?
(1) SEZs are export-oriented duty-free zones; Industrial Townships are integrated urban settlements
(2) SEZs are solely residential areas; Industrial Townships are purely commercial business hubs
(3) SEZs are managed by local municipalities; Industrial Townships are strictly military territories
(4) There is no difference; the terms are legally synonymous under the central Companies Act
(5) Question not attempted

80. Arrange the following major industrial regions of India strictly from North to South based on their geographical location:
I. Delhi-Meerut Region
II. Ahmedabad-Baroda Region
III. Mumbai-Pune Region
IV. Kollam-Thiruvananthapuram Region
Select the correct order:
(1) I, II, III, IV
(2) I, III, II, IV
(3) II, I, III, IV
(4) I, II, IV, III
(5) Question not attempted

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ANSWERS

1. (2) An industry that can be located in diverse locations without transportation cost penalties
Footloose industries represent manufacturing sectors that are not tied to specific locations by raw material availability or weight considerations. These industries typically produce high-value products like electronics or jewelry where transportation costs form a negligible part of total production costs. Consequently, they enjoy the flexibility to operate in varied environments across different geographic regions without significant economic disadvantages.

2. (3) Both Statement I and Statement II are correct
India's iron and steel industry is heavily dependent on bulky, weight-losing raw materials like iron ore and coal, necessitating locations near mines. Conversely, the cotton textile industry uses pure raw materials that do not lose weight during manufacturing. This characteristic allows textile units to be established near consumer markets, facilitating better distribution and reducing final delivery costs to consumers.

3. (3) The clustering of interconnected firms sharing infrastructure and labor pools
Agglomeration economies arise when multiple industrial units and related services cluster in a specific geographical area. This proximity allows firms to share essential infrastructure, specialized labor pools, and auxiliary services, leading to significant cost reductions. Such environments foster innovation and efficiency by facilitating better communication and resource optimization among different companies operating within the established and concentrated industrial region.

4. (4) Government policies
Geographical factors strictly encompass natural physical attributes that influence industrial location, such as local topography, prevailing climate conditions, and the availability of water resources for processing. While government policies are crucial for industrial development, they represent socio-economic or political factors rather than natural geographical ones. Distinguishing between these categories is essential for understanding regional industrial and spatial distribution patterns.

5. (3) A-iv, B-i, C-ii, D-iii
The Mumbai-Pune industrial region comprises several specialized centers. Trombay is prominently known for its petrochemical and fertilizer plants. Pimpri, located near Pune, is a major hub for the production of antibiotics and pharmaceuticals. Tarapur hosts one of India's earliest nuclear power stations, while Mumbai remains a historical and significant center for the extensive and established cotton textile manufacturing industry.

6. (2) The opening of the Suez Canal in 1869 significantly accelerated the growth of this industrial region
The Mumbai-Pune industrial region gained significant momentum following the completion of the Suez Canal in 1869. This maritime route shortened the distance between India and Europe, enhancing Mumbai's port utility for international trade. Consequently, the export of raw cotton and the import of machinery became easier, leading to the rapid proliferation of cotton mills and related industrial sectors.

7. (4) Petroleum and Petrochemicals
The discovery of oil and natural gas at Bombay High in the 1970s revolutionized the industrial landscape of the Mumbai-Pune region. This offshore field provided a steady supply of crude oil and gas, leading to the rapid expansion of petroleum refineries and petrochemical complexes. These developments significantly diversified the region's industrial base beyond traditional textiles and engineering sectors.

8. (1) I and II only
The Mumbai-Pune industrial region spans across Mumbai, Thane, and Nashik districts, utilizing hydroelectric power from the Western Ghats for its development. While the region is a major hub for automobiles and engineering, stating it is devoid of these industries is incorrect. It remains one of the most technologically advanced

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industrial clusters in India, hosting numerous global automotive giants.

9. (3) Massive local reserves of copper and bauxite
The Hugli industrial region flourished due to its proximity to Damodar Valley coalfields and the availability of soft water from the Hugli river for jute processing. The extensive riverine transport network further facilitated cheap movement of goods. However, the region lacks significant local reserves of copper and bauxite, which are more common in the Chota Nagpur plateau region.

10. (1) Both A and R are true and R is the correct explanation of A.
The Hugli industrial region faced a severe setback after the 1947 partition because major jute-growing tracts were ceded to East Pakistan, while the processing mills remained in India. This geographical separation disrupted raw material supplies, leading to the decline of its dominant jute industry. Over time, this contributed to the region's overall reduced significance compared to newer industrial hubs.

11. (1) Statement I is correct but Statement II is incorrect
Kolkata and Haora serve as the central core of the Hugli industrial region, which is historically significant for its concentration of jute mills. While it has diversified into chemicals and engineering, the region is not primarily characterized by automobile or aircraft manufacturing. Instead, it remains more focused on traditional resource-based industries and light engineering products compared to newer regions.

12. (2) I, II, and III only
As India's oldest industrial region, the Hugli belt is synonymous with the jute industry and benefited from cheap labor migrating from Bihar and Uttar Pradesh. While industrial modernization has occurred, the region has not shifted exclusively to information technology hubs. It continues to maintain a mix of traditional manufacturing, heavy engineering, and river-based logistics alongside newer service sector developments.

13. (3) Due to its emergence as a major hub for the cotton textile industry
Ahmedabad earned the title of 'Manchester of India' because it became a dominant center for cotton textile production, mirroring the prominence of Manchester in the United Kingdom. The city's proximity to cotton-growing areas in Gujarat and Maharashtra provided a steady supply of raw materials. This favorable location, combined with local entrepreneurship, led to the establishment of numerous large-scale mills.

14. (4) The region lacks an inland port, making it entirely dependent on Mumbai for exports
The Ahmedabad-Baroda region has benefited from local oil discoveries and the expansion of the textile industry. However, claiming it is entirely dependent on Mumbai for exports due to a lack of ports is incorrect. Gujarat possesses several major and minor ports, such as Kandla and Mundra, which provide excellent maritime connectivity for the region's petrochemical and textile exports.

15. (1) A-ii, B-iii, C-i, D-iv
The Gujarat industrial belt features diverse specialized hubs. Surat is globally renowned for its diamond cutting and polishing industry. Koyali is home to a major oil refinery that supports petrochemical growth. Anand is famous as the center of the white revolution and the dairy industry, while Ahmedabad remains a historical and primary center for India's cotton textile manufacturing.

16. (2) A geographical grouping of related firms, suppliers, and supporting institutions
An industrial cluster refers to a geographical concentration of interconnected businesses, specialized suppliers, and service providers within a particular field. These clusters facilitate increased productivity and innovation by allowing firms to share resources and benefit from specialized labor pools. By being located close to each other, companies can reduce logistical costs and improve collaborative efforts in research and development activities.

17. (2) Heavy Metallurgical and Mineral-based industries
The Chota Nagpur industrial region is characterized by a high concentration of heavy metallurgical and mineral-based industries. This is primarily due to the vast availability of iron ore, coal, manganese, and other essential

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famous for its traditional coir industry, utilizing local coconut husks. Thiruvananthapuram has emerged as a significant center for information technology and advanced space research, hosting facilities like the Vikram Sarabhai Space Centre.

36. (4) Iron and Steel smelting
The Kollam-Thiruvananthapuram industrial region specializes in coir, cashew, and rubber processing due to local agricultural resources. It also hosts some aluminium smelting using electricity and imported raw materials. However, iron and steel smelting is an exception because it requires massive amounts of coal and iron ore, which are not found in the region, making such heavy operations unfeasible.

37. (3) To protect the Taj Mahal by regulating regional emissions
The Taj Trapezium Zone was established as a protected area around the Taj Mahal to safeguard the monument from environmental degradation. Regulations within this zone aim to control air pollution caused by nearby industries in Agra, Mathura, and Firozabad. By limiting harmful emissions, the government seeks to prevent the discoloration and erosion of the marble structure caused by acid rain.

38. (2) I, II, III, IV, and V
The Mathura-Agra-Delhi corridor features the Mathura refinery, Firozabad's glassworks, and Agra's leather industry. Due to environmental concerns around the Taj Mahal, the region is governed by strict Taj Trapezium Zone regulations. These rules have forced industries to modernize and shift from polluting coal to cleaner natural gas, ensuring industrial continuity while protecting the heritage monument from atmospheric pollutants.

39. (4) Cause: Supreme Court directives; Effect: Shift to natural gas
The widespread adoption of natural gas in the Agra-Mathura region resulted directly from Supreme Court directives aimed at reducing industrial pollution. To protect the Taj Mahal from the harmful effects of coal-fired emissions, the court mandated that industrial units switch to cleaner fuels. This legal intervention led to the establishment of gas pipelines and the modernization of several traditional manufacturing processes.

40. (1) Firozabad has historically been the center of India's glass and bangle industry
Firozabad is globally recognized as the primary center for India's glass and bangle industry, maintaining a long-standing tradition of craftsmanship. Other statements are inaccurate because Agra is known for leather, not heavy electrical machinery, and Mathura is famous for its oil refinery rather than being an IT hub. Furthermore, the entire corridor is subject to very strict environmental emission norms.

41. (3) Japan
The Delhi-Mumbai Industrial Corridor is a flagship infrastructure project being developed by the Government of India in collaboration with Japan. This partnership involves significant Japanese financial investment and technical expertise. The goal is to create a world-class industrial zone across six states, leveraging the Western Dedicated Freight Corridor to boost manufacturing, exports, and overall economic growth through bilateral cooperation.

42. (1) I, II, III, IV
Moving from north to south along the corridor, the Dadri-Noida-Ghaziabad region in Uttar Pradesh is the northernmost point. Following this is the Khushkhera-Bhiwadi-Neemrana region in Rajasthan. Progressing further south, one enters the Ahmedabad-Dholera investment region in Gujarat. Finally, the Shendra-Bidkin industrial park in Maharashtra represents the southernmost major node of the planned Delhi-Mumbai Industrial Corridor infrastructure project.

43. (4) Dedicated Freight Corridor (Western DFC)
The Western Dedicated Freight Corridor serves as the logistical backbone of the Delhi-Mumbai Industrial Corridor. This high-capacity railway line is designed to facilitate the rapid and efficient movement of goods between the northern hinterland and western ports. By aligning industrial nodes along this corridor, the project aims to reduce transportation costs and time, significantly enhancing the global competitiveness of Indian manufacturing.

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not require proximity to heavy raw materials and focus on consumer electronics, textiles, automobiles, and various high-value service sectors.

27. (4) It exhibits a high concentration of consumer goods industries driven by the massive local market
The Delhi-Meerut industrial region is primarily driven by the vast local market of the National Capital Region. This proximity to a large population base encourages the concentration of consumer goods industries, electronics, and food processing. Unlike coastal hubs, it relies on land-based logistics. Its growth is more recent and market-driven rather than being based on local mineral resource extraction.

28. (2) I and III only
The Delhi-Meerut region developed significantly after independence due to government support and infrastructure across Delhi, Uttar Pradesh, and Haryana. While it is a hub for consumer goods and engineering, it is not noted for heavy metallurgy or shipbuilding, which are typically located near mineral belts or coastlines. Its industrial strength lies in market-accessible sectors like electronics and automobiles.

29. (3) The Krishna-Godavari delta hinterland and active ports
The Vishakhapatnam-Guntur industrial region benefits from its location near the Krishna-Godavari delta and active maritime ports. These ports facilitate the easy import of raw materials and the export of finished products. The presence of a productive agricultural hinterland and access to maritime trade routes has been the primary driver for the development of oil refineries, fertilizers, and shipbuilding industries.

30. (1) Both A and R are true and R is the correct explanation of A.
Industrialization in the Vishakhapatnam-Guntur region has surged recently due to the discovery and exploitation of local energy resources. Coal from the Godavari basin and oil and gas from the Krishna-Godavari offshore fields provided the necessary power and raw materials. This energy security attracted heavy industries like fertilizers, petrochemicals, and steel, leading to rapid economic growth and regional development.

31. (1) Kurnool
Rajahmundry, Machilipatnam, and Vijayawada are key nodes within the coastal Vishakhapatnam-Guntur industrial region, benefiting from proximity to the Krishna-Godavari delta and ports. Kurnool, however, is located further inland in the Rayalaseema region and is not a primary part of this specific coastal industrial belt. Its industrial profile and geographic orientation differ significantly from the maritime-focused Vishakhapatnam-Guntur corridor.

32. (2) I, II, and III only
The Vishakhapatnam-Guntur industrial region is known for its prominent shipbuilding, oil refining, and fertilizer manufacturing sectors. These industries utilize the region's port facilities and newly discovered energy resources from the Krishna-Godavari basin. While the region has some textile units, it is not a major center for jute textiles, which remain concentrated along the Hugli river in West Bengal.

33. (2) Plantation agriculture and hydro-power
The Kollam-Thiruvananthapuram industrial region is largely built on plantation agriculture and the availability of hydroelectric power. The abundance of crops like coconuts, rubber, and cashew nuts forms the basis for local processing units. Additionally, the region's numerous rivers and mountainous terrain have allowed for the development of hydropower, which provides the clean energy needed to sustain these agro-based industries.

34. (3) Both Statement I and Statement II are correct
This southern industrial region lacks metallic minerals and coal, which prevents the establishment of heavy metallurgical industries. Instead, it leverages its unique agricultural and natural resources. The industrial landscape is consequently dominated by coir, cashew processing, and rubber-based products. These sectors utilize local raw materials and skilled labor, defining the region's specialized economic profile within the national industrial framework.

35. (3) A-ii, B-iv, C-i, D-iii
Kerala's industrial centers are characterized by specialized activities. Punalur is known for its paper industry, while Kochi is a major hub for oil refining and petrochemicals. Alappuzha is

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sales. Most Maharatna companies are significant players in both domestic and international markets, supporting national energy security.

70. (3) A is true but R is false
Post-independence, the government strategically located public sector units in backward regions like Chota Nagpur to promote balanced regional development and reduce economic disparities. This decision was driven by social welfare and regional equity objectives rather than a sole focus on financial profit maximization. By establishing these industries in less developed areas, the state aimed to provide local employment and infrastructure.

71. (4) 1997
In 1997, the Government of India introduced the Navratna and Miniratna categories to provide greater financial and operational autonomy to high-performing Public Sector Enterprises. This reform allowed these companies to make significant investment decisions without seeking prior government approval for every project. The objective was to make them more competitive in the global market and improve their overall efficiency during the liberalization era.

72. (1) I, II, and IV only
After 1991, the public sector's role changed significantly as the number of reserved industries was drastically reduced and disinvestment was encouraged. The government also focused on professionalizing management by granting greater autonomy to these enterprises. Contrary to increasing unconditional support, the policy aimed to reduce budgetary aid for loss-making units, encouraging them to become self-sustaining or undergo restructuring to improve efficiency.

73. (3) Atomic Energy
While India has opened many sectors like automobiles, electronics, and highways to 100% Foreign Direct Investment through the automatic route, atomic energy remains strictly prohibited for foreign investment. This sector is considered strategically sensitive and is managed exclusively by the government. Protecting national security and maintaining sovereign control over nuclear resources are the primary reasons for keeping this industry closed to private participation.

74. (1) Superior infrastructure, skilled workforce, and favorable state policies
Foreign Direct Investment is concentrated in western and southern states because they offer superior infrastructure, a highly skilled workforce, and business-friendly state policies. These regions have developed advanced logistics, reliable power supplies, and efficient administrative systems that attract international investors. This environment reduces operational risks and costs, making these states more attractive destinations compared to regions with less developed industrial and economic ecosystems.

75. (4) A-iv, B-i, C-ii, D-iii
India's foreign investment policy sets specific limits for different sectors. Under the automatic route, defense manufacturing currently allows up to 74% FDI. The insurance sector has also been opened up to 74%. Multi-brand retail trading is permitted with a 51% limit under specific conditions. However, the lottery business remains strictly prohibited for any foreign investment due to social and ethical considerations.

76. (3) Both Statement I and Statement II are correct
Foreign Direct Investment represents a long-term commitment where the investor gains a significant degree of control or influence over a foreign enterprise. In contrast, Foreign Portfolio Investment involves shorter-term financial investments in stocks or bonds, providing liquidity without direct management involvement. Analyzing these differences is crucial for understanding how international capital flows affect a country's economic stability and industrial growth patterns.

77. (3) 2015
The Smart Cities Mission was launched by the Government of India in June 2015. This urban renewal and retrofitting program aims to develop 100 cities across the country, making them citizen-friendly and sustainable. The mission focuses on creating robust economic infrastructure, improving core services, and using digital technologies to enhance the quality of life and support efficient industrial and commercial activities.

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44. (1) Statement I is correct but Statement II is incorrect
The Chennai-Bengaluru Industrial Corridor is designed to accelerate regional industrial growth and encourage the clustering of related businesses. However, industrial corridors are not restricted to agricultural development. Their primary focus is on boosting manufacturing, infrastructure, and urban growth. They aim to create high-tech industrial zones that can integrate with global supply chains rather than limiting activities to the agricultural sector.

45. (3) A-iii, B-i, C-iv, D-ii
Major Special Economic Zones in India are distributed across various states to promote regional exports. SEEPZ is located in Santacruz, Maharashtra, focusing on electronics and jewelry. Kandla, in Gujarat, was India's first export processing zone. MEPZ is situated in Tambaram, Tamil Nadu, while Falta serves as an important export hub in West Bengal, facilitating trade through the Hugli river system.

46. (4) A duty-free enclave treated as foreign territory for trade operations
A Special Economic Zone is a specifically delineated, duty-free enclave designed to promote exports and economic growth. For the purposes of trade operations, duties, and tariffs, these zones are legally treated as foreign territory. This status allows businesses operating within the SEZ to import raw materials and capital goods without paying customs duties, provided the final products are exported.

47. (1) It explicitly prohibits any Foreign Direct Investment (FDI) within the SEZ enclaves
The Special Economic Zone Act of 2005 actually encourages Foreign Direct Investment by offering a conducive environment and various fiscal incentives. Claiming that it prohibits FDI is incorrect, as attracting foreign capital is a primary objective of the policy. The Act also provides single-window clearance and tax exemptions to simplify the process for both domestic and international investors within these zones.

48. (2) III only
Special Economic Zones are established to generate additional economic activity and promote the export of goods and services. They are designed to attract, rather than restrict, both domestic and foreign investment through various incentives and simplified regulatory frameworks. Therefore, any statement suggesting that these zones aim to limit investment is fundamentally incorrect and contradicts the core purpose of the SEZ policy.

49. (2) Investment up to Rs. 50 crore and Annual Turnover up to Rs. 250 crore
Under the revised classification effective from July 2020, a 'Medium' enterprise is defined by specific financial thresholds. It includes units where the investment in plant and machinery or equipment does not exceed fifty crore rupees and the annual turnover does not exceed two hundred and fifty crore rupees. This composite criterion was introduced to simplify the identification of businesses within this sector.

50. (3) A is true but R is false
MSMEs are vital for employment generation in India because they are generally labor-intensive, meaning they employ more people per unit of capital compared to large industries. While they play a crucial role in the economy, claiming they are capital-intensive is incorrect. Their ability to provide jobs with relatively lower investment makes them essential for inclusive growth and regional development across the country.

51. (3) They lower capital burdens by providing shared infrastructure and power
Industrial estates significantly benefit MSMEs by providing ready-to-use plots with essential shared infrastructure like roads, electricity, and water. This arrangement reduces the initial capital burden on small entrepreneurs, allowing them to focus their resources on production. By offering a centralized location with collective facilities, industrial estates help smaller units achieve economies of scale and improve their overall operational efficiency and competitiveness.

52. (4) I, II, and III only
Industrial clusters facilitate better information flow, technological spillovers, and collective bargaining for raw materials among small producers. The government supports these clusters through specialized schemes like the MSE-CDP. However, they are not exclusively established in metropolitan cities. Many clusters

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CHAPTER 15

Iron & Steel, Textile and Sugar Industries

1. Which of the following best describes the fundamental raw material characteristics of the traditional integrated iron and steel industry?
(1) It primarily depends on weight-gaining raw materials that are easily transported over long distances across the country.
(2) It utilizes heavy and weight-losing raw materials, requiring plant locations near raw material sources.
(3) It relies exclusively on electric power and scrap iron, minimizing the need for raw material proximity and logistics.
(4) It is footloose in nature and can be located anywhere irrespective of coal and iron ore deposits found in the region.
(5) Question not attempted

2. Consider the following statements regarding the Tata Iron and Steel Company (TISCO):
Statement I: TISCO was the first integrated steel plant established in India.
Statement II: It was established at Jamshedpur due to its proximity to the confluence of the Subarnarekha and Kharkai rivers.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

3. Match List I with List II and select the correct answer using the options given below:
List I: Steel Plant
A. Bhilai Steel Plant
B. Durgapur Steel Plant
C. Rourkela Steel Plant
D. Bokaro Steel Plant
List II: State
i. West Bengal
ii. Jharkhand
iii. Chhattisgarh
iv. Odisha
(1) A-iv, B-ii, C-iii, D-i
(2) A-iii, B-iv, C-i, D-ii
(3) A-iii, B-i, C-iv, D-ii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

4. What was the primary effect of foreign collaboration in the establishment of the Bhilai Steel Plant during the Second Five Year Plan?
(1) It led to the privatization of the Indian steel sector to attract global private investors.
(2) It shifted the focus of Indian industrialization strictly towards the coastal regions of South India.
(3) It mandated the exclusive use of electric arc furnace technology in all Indian steel production units.
(4) It created a public sector giant built with technological and financial help from the Soviet Union.
(5) Question not attempted

5. Consider the following statements regarding the Durgapur and Rourkela steel plants:
I. Both plants were established as public sector units during the Second Five Year Plan.
II. Durgapur was established with British collaboration, while Rourkela was built with German collaboration.
III. Both plants are located in the coastal state of Andhra Pradesh.
Which of the above statements is/are correct?
(1) II and III only
(2) I and III only
(3) I and II only
(4) I, II and III
(5) Question not attempted

6. Which foreign country collaborated with India to establish the Bokaro Steel Plant?

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61. (3) 2014
The 'Make in India' initiative was launched by the Government of India in September 2014. This major national program aims to encourage companies to manufacture their products in India and increase the manufacturing sector's contribution to the national GDP. By improving infrastructure and easing business regulations, the initiative seeks to transform India into a global manufacturing hub and generate large-scale employment.

62. (1) III, II, IV, I
Chronologically, the Special Economic Zones Act was passed in 2005 to boost exports. Nearly a decade later, the Make in India initiative was launched in 2014. This was followed by the Startup India program in 2016 to foster entrepreneurship. Finally, the Production Linked Incentive scheme was significantly expanded in 2020 to provide financial incentives for manufacturing in 14 strategic sectors.

63. (1) To transform India into a manufacturing hub and increase its GDP share
The primary goal of the Make in India initiative is to turn the country into a global manufacturing center. By attracting investment and enhancing domestic production capabilities, the program aims to increase the manufacturing sector's share in India's GDP. This transition is intended to create millions of jobs, modernize the industrial infrastructure, and reduce the country's reliance on imported finished goods.

64. (2) Statement II is correct but Statement I is incorrect
Under the Make in India initiative, Foreign Direct Investment norms were relaxed across various sectors to attract international capital and technology. The program initially focused on 25 diverse sectors, including aviation and biotechnology, to stimulate manufacturing growth. By easing these restrictions, the government aimed to integrate the Indian economy more closely with global supply chains and improve overall industrial competitiveness.

65. (2) A-iii, B-iv, C-i, D-ii
Indian industrial policies have evolved through several stages. The 1948 resolution introduced the mixed economy model, while the 1956 resolution classified industries into three schedules. The 1977 statement placed a strong emphasis on small-scale and cottage industries to boost rural employment. Finally, the landmark 1991 New Industrial Policy abolished licensing for most sectors, opening the Indian economy to global market forces.

66. (1) Mahalanobis Model
The Industrial Policy Resolution of 1956 was deeply influenced by the Mahalanobis model of economic planning. This model emphasized the development of heavy and capital goods industries under the public sector to achieve long-term industrial self-reliance. By focusing on large-scale investments in steel, power, and machinery, the policy aimed to create a strong industrial foundation for the newly independent Indian nation.

67. (3) It introduced the concept of mandatory phased manufacturing programs for all foreign companies
The New Industrial Policy of 1991 focused on liberalization by removing the MRTP limit and reducing the number of sectors reserved for the public sector. It opened many industries to 100% Foreign Direct Investment. However, it did not introduce mandatory phased manufacturing programs for all foreign companies; instead, it aimed to reduce restrictive conditions to create a more investor-friendly environment.

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68. (4) I and II only
Often called the Economic Constitution of India, the 1956 resolution gave the State exclusive responsibility for Schedule A industries. However, it did not ban the private sector; instead, it allowed private enterprises to operate in other categories and even coexist in some areas. The policy established a framework for a dominant public sector while still acknowledging the private sector's role.

69. (3) It must be a 100% export-oriented unit with zero domestic sales
To achieve Maharatna status, a company must already hold Navratna status, be listed on an Indian stock exchange, and meet specific profit and turnover thresholds over three years. However, there is no requirement for it to be a 100% export-oriented unit with zero domestic

thrive in smaller towns and rural areas where traditional skills or specific raw materials are abundant, contributing to balanced regional development.

53. (3) Cause: Hilly topography and poor transport; Effect: High production costs
The industrial backwardness of India's North-Eastern states is primarily caused by difficult hilly topography and inadequate transport infrastructure. These physical barriers make the movement of raw materials and finished goods expensive and time-consuming. Consequently, the high production and logistical costs discourage large-scale industrial investment, leading to slower economic growth compared to the more accessible and well-connected plains of India.

54. (1) Statement I is correct but Statement II is incorrect
The North East Industrial Development Scheme provides various financial incentives to encourage industrialization in the region. However, the scheme is not restricted to public sector undertakings; it is specifically designed to attract private investment and entrepreneurship. By offering subsidies and tax benefits to new units, the government aims to overcome regional geographical disadvantages and foster a more vibrant and diverse industrial ecosystem.

55. (4) A-ii, B-iv, C-iii, D-i
North-Eastern states have distinct industrial profiles based on their resources. Assam is famous for tea processing and its long-standing petrochemical industry. Meghalaya utilizes its limestone reserves for cement production. Tripura focuses on bamboo and rubber-based manufacturing due to its abundant plantations. Sikkim has successfully developed a niche in the pharmaceutical sector and breweries, leveraging its clean environment and favorable state-level industrial policies.

56. (1) Assam
The Numaligarh Refinery is located in the Golaghat district of Assam. It was established following the Assam Accord to boost industrial growth and utilize local crude oil resources. The refinery plays a critical role in the economic development of Northeast India by providing fuel and supporting petrochemical activities, making it a key industrial landmark in the region.

57. (3) High density of national highways
To measure industrial backwardness, indicators like per capita industrial output and the number of factories per lakh population are typically used. These metrics reflect the actual level of industrial activity and employment. Conversely, a high density of national highways is an indicator of infrastructure development rather than backwardness. While good roads support industry, they do not directly measure the absence of industrialization.

58. (1) I, II, III, IV, and V
Industrial disparity in India is caused by historical colonial focus on ports and uneven mineral distribution. It is further exacerbated by differences in infrastructure, state-level policies, and the resulting concentration of Foreign Direct Investment in advanced states. These combined factors create a cycle where already developed regions attract more capital and growth, while less developed areas struggle to overcome logistical hurdles.

59. (4) Pande Committee (1968) - Identification of backward areas for industrial incentives
The Pande Committee was established in 1968 with the specific mandate of identifying industrially backward states and regions in India. Its recommendations helped the government formulate policies to provide special incentives and subsidies to encourage industrial growth in these neglected areas. This was a significant step toward achieving balanced regional development and addressing the economic disparities inherited from the colonial era.

60. (2) It nullified the locational advantage of mineral-rich regions for local industry
The Freight Equalization Policy made essential industrial inputs like coal and iron ore available at the same price across India by subsidizing transport costs. While this helped industries grow in distant states, it removed the natural competitive advantage of mineral-rich regions like Bihar and Odisha. Consequently, these regions failed to attract local manufacturing units, leading to their relative industrial stagnation.

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78. (4) I, II, III, and IV only
The Smart Cities Mission promotes core infrastructure elements such as adequate water and electricity supply, robust IT connectivity, and digital e-governance. It aims to create an environment conducive to both residents and businesses. However, it does not prohibit manufacturing activities. Instead, it encourages the development of clean and smart industrial enclaves that can coexist within modern urban settlements to foster growth.

79. (1) SEZs are export-oriented duty-free zones; Industrial Townships are integrated urban settlements
Special Economic Zones are specifically designed as duty-free enclaves aimed at maximizing exports through various fiscal incentives. In contrast, Industrial Townships are integrated urban settlements that provide both industrial spaces and residential facilities for workers. While an SEZ focuses on trade and manufacturing for international markets, an industrial township creates a comprehensive living and working environment to support large-scale industrial activities.

80. (1) I, II, III, IV
When arranged from north to south, the Delhi-Meerut region in Northern India is first. Moving southward, the Ahmedabad-Baroda region in Gujarat is next, followed by the Mumbai-Pune industrial belt in Maharashtra. The southernmost of these major clusters is the Kollam-Thiruvananthapuram region in Kerala. This sequence reflects the broad geographical spread of India's primary industrial zones across the length of the country.

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minerals in the plateau. Consequently, the region has become the heart of India's steel production and heavy engineering sector, supporting several large public and private enterprises.

18. (1) I, II, III, IV, and V
The Chota Nagpur industrial region encompasses major facilities like the steel plants at Jamshedpur, Bokaro, and Rourkela. It also includes the Heavy Engineering Corporation in Ranchi and the Sindri fertilizer plant. These industries are strategically located to utilize the local abundance of coal and iron ore, creating a massive interconnected industrial landscape across Jharkhand, Odisha, and West Bengal.

19. (3) The need to supply machinery to the local steel plants and mines
The Heavy Engineering Corporation at Ranchi was established to support the mineral-rich Chota Nagpur region. Its primary function is to manufacture heavy machinery and equipment required by the nearby steel plants and mining operations. By producing these essential capital goods locally, the facility reduces dependency on imports and enhances the overall industrial efficiency of India's metallurgical and mining sectors.

20. (4) Sindri - Petrochemicals and crude oil refining
While Jharia is famous for coal mining, Jamshedpur for iron and steel, and Hazaribagh for mica, Sindri is primarily known for its fertilizer plant. Sindri does not function as a major center for petrochemicals or crude oil refining. Those industries are typically located near coastal ports or oil-producing fields, unlike Sindri, which focuses on mineral-based chemical fertilizer production.

21. (3) Pykara Hydroelectric Plant
The Pykara Hydroelectric Plant, established in the Nilgiris during the 1930s, provided the essential cheap power required for the early development of the Bangalore-Chennai industrial region. This energy source catalyzed the growth of textile mills and engineering units in Coimbatore and surrounding areas. It played a pivotal role in transforming the region into a modern industrial and manufacturing hub.

22. (1) Chennai, Bangalore, Coimbatore, Madurai
Following a north-to-south geographical alignment along the southern industrial corridor, Chennai is the northernmost major hub. Moving southwards, one reaches the high-altitude plateau of Bangalore. Further south lies the textile and engineering center of Coimbatore in Tamil Nadu. Finally, Madurai is located in the southern part of the state, serving as an important cultural and industrial node in the region.

23. (4) Jute Processing
The Bangalore-Chennai industrial region is characterized by aerospace, information technology, and automobile manufacturing. It has evolved as a sophisticated hub for high-tech industries and engineering. However, jute processing is not traditionally associated with this region, as it is primarily concentrated in the Hugli belt of West Bengal, where the raw materials are grown and riverine ecosystems support production.

24. (1) Statement I is correct but Statement II is incorrect
The establishment of public sector giants like HAL and HMT was fundamental to the growth of aircraft and machine tools in this region. However, the region does not rely entirely on coal from Chota Nagpur. It utilizes local hydroelectric power and has increasingly integrated nuclear and renewable energy sources, such as wind and solar, to meet diverse industrial demands.

25. (3) A-ii, B-iv, C-i, D-iii
The Delhi-Meerut industrial region features specialized hubs. Gurugram is a global center for automobiles, notably hosting Maruti Suzuki. Noida is a prominent hub for IT services and electronics manufacturing. Meerut is traditionally famous for its sports goods and sugar industries. Faridabad is a major engineering center known for manufacturing tractors and other heavy industrial machinery for the region.

26. (1) Market-oriented and footloose industries
The Delhi-Meerut industrial region is dominated by market-oriented and footloose industries. These sectors are attracted to the region due to the massive consumer base in the National Capital Region and excellent transport connectivity. Unlike mineral-based industries, these units do

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(1) United Kingdom
(2) Soviet Union
(3) West Germany
(4) United States of America
(5) Question not attempted

7. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The Vizag Steel Plant enjoys a unique locational advantage compared to early public sector steel plants in India.
Reason (R): It is a shore-based integrated steel plant, which facilitates the easier import of raw materials and export of finished goods.
Select the correct answer using the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

8. Identify the incorrect statement regarding the steel plants of South India.
(1) Bhadravati relies solely on coking coal imports from Australia due to a lack of local coal or forests.
(2) The Salem steel plant is located in the state of Tamil Nadu to cater to specialized steel needs.
(3) The Bhadravati steel plant is situated in the state of Karnataka near the river Bhadra's banks.
(4) The Salem steel plant is widely renowned for producing a variety of high-quality stainless steel.
(5) Question not attempted

9. Consider the following statements regarding mini steel plants:
I. They primarily use electric arc furnace technology.
II. They rely heavily on steel scrap and sponge iron rather than primary iron ore.
III. They require less capital investment compared to integrated steel plants.
IV. They produce mild and alloy steel of given specifications.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) I, III and IV only
(3) I, II, III and IV
(4) II, III and IV only
(5) Question not attempted

10. Find the odd one out with respect to the historical concentration of the cotton textile industry in India.
(1) Bhilai
(2) Mumbai
(3) Ahmedabad
(4) Surat
(5) Question not attempted

11. Match List I with List II and select the correct answer using the options given below:
List I: Textile Sector Feature
A. Handloom
B. Powerloom
C. Mill Sector
D. Synthetic Fibre
List II: Description
i. Capital-intensive and organized large-scale production
ii. Highly decentralized and heavily reliant on petrochemicals
iii. Traditional, highly labor-intensive, unorganized weaving
iv. Decentralized, mechanized weaving dominating total production
(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-ii, C-iv, D-i
(3) A-ii, B-iv, C-i, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

12. Which underlying concept best explains the post-independence decentralisation of the cotton textile industry in India?
(1) Cotton is a purely weight-losing raw material that strictly restricts mills to being near agricultural fields.
(2) The growth of power and transport networks allowed mills to move closer to local consumer markets.
(3) Government regulations strictly banned cotton mills in western India after the independence of 1947.
(4) The complete depletion of raw cotton in Maharashtra forced industrial units to

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coastal cyclones.

Which of the above statement(s) is/are correct?

(1) II, III and IV only
(2) I, III and IV only
(3) I, II and III only
(4) I, II, III and IV
(5) Question not attempted

52. The Durgapur Steel Plant, known for its significant contribution to the public sector, is located in which state?

(1) Jharkhand
(2) Odisha
(3) Bihar
(4) West Bengal
(5) Question not attempted

53. Match List I with List II and select the correct answer using the options given below:

List I: Region/State

A. Jammu & Kashmir
B. West Bengal
C. Maharashtra
D. Chhattisgarh

List II: Prominent Industry

i. Cooperative Sugar Mills
ii. Bhilai Steel Plant
iii. Jute Textile concentration
iv. Silk Industry

(1) A-i, B-ii, C-iii, D-iv
(2) A-iv, B-i, C-ii, D-iii
(3) A-iv, B-iii, C-i, D-ii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

54. What is a major cause for the historical concentration of the cotton textile industry in Ahmedabad?

(1) Its location on the coast allowed direct import of British cotton for local processing.
(2) Its location in a major cotton-growing region provided easy access to raw materials.
(3) It was the only city in India with access to electric arc furnaces for textile machinery.
(4) The British government mandated that all cotton mills be moved out of the city of Mumbai.
(5) Question not attempted

55. Consider the following statements regarding major Indian industries:

I. The jute industry is heavily concentrated in West Bengal.
II. The silk industry has significant centers in Karnataka, West Bengal, and J&K.
III. The sugar industry relies on a raw material that gains weight during processing.
IV. The decentralized powerloom sector dominates textile production.
V. Salem steel plant is located in South India.

Which of the above statement(s) is/are correct?

(1) I, II, III and IV only
(2) II, III, IV and V only
(3) I, III, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

56. Which of the following represents the correct sequence of these states based on their traditional dominance in the sugar industry from North India to Peninsular India?

(1) Uttar Pradesh, Maharashtra, Tamil Nadu
(2) Tamil Nadu, Maharashtra, Uttar Pradesh
(3) Maharashtra, Uttar Pradesh, Tamil Nadu
(4) Uttar Pradesh, Tamil Nadu, Maharashtra
(5) Question not attempted

57. Identify the incorrect statement regarding the sugar industry in India.

(1) It is a weight-losing industry, which dictates mill locations near sugarcane fields.
(2) Uttar Pradesh and Maharashtra are two of the leading sugar-producing states in India.
(3) The cooperative sugar mill model has completely failed in Maharashtra due to low interest.
(4) The seasonal nature of the industry is a major logistical and financial challenge for mills.
(5) Question not attempted

58. Which of the following water bodies did NOT historically serve as a primary water source for the TISCO plant at Jamshedpur?

(1) Hooghly River
(2) Subarnarekha River
(3) Kharkai River
(4) Dimna Lake
(5) Question not attempted

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Pradesh.
III. The cooperative sugar mill model is highly successful and prevalent in Maharashtra.
Which of the above statement(s) is/are incorrect?
(1) II only
(2) I and III only
(3) I only
(4) II and III only
(5) Question not attempted

20. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The sugar industry in India faces severe challenges due to its seasonal nature.
Reason (R): Sugarcane is a perishable crop that must be crushed quickly after harvesting to prevent sucrose loss, restricting mill operations to the harvesting months.
Select the correct answer using the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

21. Which statement accurately describes the cooperative sugar mills in the Maharashtra model?
(1) They are exclusively owned and operated by the central government through a public sector board.
(2) They are multi-national corporations exploiting local farming resources and labor for global gain.
(3) They are owned by local sugarcane farmers acting as collective shareholders and suppliers.
(4) They solely rely on imported raw sugar from global markets for domestic refinery processing.
(5) Question not attempted

22. Consider the following statements regarding government initiatives for industrial clusters:
Statement I: Textile parks and sugar clusters are designed to provide world-class infrastructure and common facilities to local industries.
Statement II: These initiatives aim to reduce production costs and enhance the global competitiveness of Indian textile and sugar products.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

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23. Consider the following statements regarding the raw material needs of the iron and steel industry:
I. Coking coal is essential for smelting iron ore in a blast furnace.
II. Limestone is used as a flux to remove impurities during smelting.
III. Manganese is added to impart strength and toughness to steel.
IV. Bauxite is the primary ore used to extract pure iron.
Which of the above statement(s) is/are correct?
(1) II, III and IV only
(2) I, III and IV only
(3) I, II, III and IV
(4) I, II and III only
(5) Question not attempted

24. Which historical distinction belongs to the Tata Iron and Steel Company (TISCO) at Jamshedpur?
(1) It was the first integrated steel plant in India.
(2) It was the first coastal steel plant in India.
(3) It was the first public sector steel plant post-independence.
(4) It is the only steel plant in India based entirely on electric arc furnaces.
(5) Question not attempted

25. Match List I with List II and select the correct answer using the options given below:
List I: Public Sector Steel Plant
A. Bhilai
B. Durgapur
C. Rourkela
D. Bokaro
List II: Foreign Collaborator
i. United Kingdom

ii. West Germany
iii. Soviet Union (First Phase)
iv. Soviet Union (Later Phase)
(1) A-iv, B-ii, C-i, D-iii
(2) A-iii, B-ii, C-i, D-iv
(3) A-iii, B-i, C-ii, D-iv
(4) A-i, B-iii, C-iv, D-ii
(5) Question not attempted

26. What was the primary cause for the initial establishment and rapid growth of the cotton textile industry in Mumbai during the 19th century?
(1) Proximity to black soil regions, humid climate, and port facilities for importing machinery.
(2) The discovery of large coal deposits and iron ore mines in the immediate vicinity of the city.
(3) The immediate availability of cheap hydroelectricity from the Western Ghats at that historical time.
(4) Exclusive government subsidies provided by the British solely for Mumbai-based cotton weavers.
(5) Question not attempted

27. Consider the following statements regarding South Indian and coastal steel plants:
I. The Vizag Steel Plant lacks a coastal location advantage.
II. The Salem steel plant relies primarily on imported iron ore from Brazil.
III. The Bhadravati steel plant is situated on the banks of the river Bhadra.
IV. The Vizag plant was built with Japanese collaboration.
V. Salem is widely known for producing high-grade stainless steel.
Which of the above statement(s) is/are incorrect?
(1) III and V only
(2) I, III and V only
(3) II, IV and V only
(4) I, II and IV only
(5) Question not attempted

28. Identify the incorrect statement regarding the concentration of industries.
(1) Jute Textile Industry - West Bengal
(2) Silk Industry origin - Rajasthan
(3) Cooperative Sugar Mills - Maharashtra
(4) Cotton Textile Industry origin - Mumbai and Ahmedabad
(5) Question not attempted

29. Which of the following represents the correct chronological sequence of the establishment of these major steel plants in India?
(1) TISCO Jamshedpur, Bhilai Steel Plant, Bokaro Steel Plant, Vizag Steel Plant
(2) Bhilai Steel Plant, TISCO Jamshedpur, Vizag Steel Plant, Bokaro Steel Plant
(3) Bokaro Steel Plant, TISCO Jamshedpur, Bhilai Steel Plant, Vizag Steel Plant
(4) TISCO Jamshedpur, Vizag Steel Plant, Bhilai Steel Plant, Bokaro Steel Plant
(5) Question not attempted

30. Which of the following is NOT a characteristic feature of mini steel plants in India?
(1) They utilize electric arc furnace technology instead of the older blast furnaces.
(2) They are primarily decentralized and scattered across many regions of the country.
(3) They predominantly use steel scrap and sponge iron rather than primary iron ore.
(4) They require massive land areas and fully integrate iron ore smelting in blast furnaces.
(5) Question not attempted

31. Match List I with List II and select the correct answer using the options given below:
List I: Textile Centre
A. Mumbai
B. Ahmedabad
C. Coimbatore
D. Kanpur
List II: Common Description
i. Manchester of India
ii. Cottonopolis of India
iii. Manchester of North India
iv. Manchester of South India
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

32. The Bhilai Steel Plant, a public sector giant, was set up in which modern-day Indian state?
(1) Jharkhand
(2) Chhattisgarh

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(3) Odisha
(4) Madhya Pradesh
(5) Question not attempted

33. Consider the following statements regarding the silk industry in India:
I. Karnataka is a major producer of mulberry silk.
II. West Bengal is traditionally known for its silk weaving centers.
III. Jammu & Kashmir produces high-quality silk due to its conducive climate for sericulture.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) I, II and III
(3) II and III only
(4) I and III only
(5) Question not attempted

34. Which of the following statements correctly identifies the reason for the concentration of the jute textile industry in West Bengal?
(1) The Hooghly basin provides abundant fresh water required for retting the jute fibre.
(2) West Bengal has the largest deposit of synthetic polymers required for jute blending.
(3) Jute mills require dry, moisture-free air, which is uniquely found in Kolkata.
(4) West Bengal strictly prohibits the production of any other textile.
(5) Question not attempted

35. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The cotton textile industry in India has undergone significant decentralisation post-independence.
Reason (R): The expansion of the railway network, the availability of electricity in diverse regions, and a market-driven approach reduced the industry's strict dependence on raw cotton growing areas.
Select the correct answer using the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

36. Consider the following statements regarding the Bokaro Steel Plant:
Statement I: It was established with technical and financial collaboration from the United Kingdom.
Statement II: It was established primarily as a coastal steel plant to boost exports.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

37. Consider the following statements regarding the distribution of the sugar industry:
I. Uttar Pradesh is a prominent state in the traditional northern sugarcane belt.
II. Maharashtra leads the southern sugarcane belt due to a highly successful cooperative model.
III. The sugar industry is completely independent of the seasonal harvesting of sugarcane.
IV. Sugarcane cultivated in Maharashtra typically has lower sucrose content than that in Uttar Pradesh.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) II and III only
(3) III and IV only
(4) I and IV only
(5) Question not attempted

38. Find the odd one out concerning the inputs and raw materials required for traditional integrated iron and steel plants.
(1) Coking coal
(2) Sugarcane bagasse
(3) Limestone
(4) Manganese ore
(5) Question not attempted

39. Match List I with List II and select the correct answer using the options given below:

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List I: Industry
A. Sugar Industry
B. Jute Industry
C. Mini Steel Plants
D. Cotton Textile
List II: Major Challenge/Feature
i. Heavy reliance on electric power and scrap metal
ii. Faces intense competition from synthetic packaging materials
iii. Decentralized shift from raw material sources to market areas
iv. Highly seasonal nature of operations and perishable raw material
(1) A-i, B-iii, C-iv, D-ii
(2) A-iv, B-i, C-ii, D-iii
(3) A-ii, B-iv, C-iii, D-i
(4) A-iv, B-ii, C-i, D-iii
(5) Question not attempted

40. Which is the most appropriate reason for the coastal location advantage of the Vizag Steel Plant?
(1) It minimizes costs for exporting steel and importing high-grade coking coal from abroad.
(2) It allows the plant to use seawater directly in blast furnaces without modern desalination.
(3) It benefits from coastal winds which naturally power electric arc furnaces in the region.
(4) It avoids the strict environmental regulations typically imposed on inland industrial plants.
(5) Question not attempted

41. Arrange the following integrated steel plants from North to South based on their geographical location in India:
I. Bokaro Steel Plant
II. Bhilai Steel Plant
III. Salem Steel Plant
Select the correct order from the options given below:
(1) I, II, III
(2) II, I, III
(3) I, III, II
(4) III, II, I
(5) Question not attempted

42. Identify the incorrect statement regarding the Bhadravati steel plant.
(1) It relies on high-grade coking coal deposits located within the local Bhadravati region.
(2) It is located in the state of Karnataka near the Baba Budan Giri iron ore hills.
(3) It was originally established and known as the Mysore Iron and Steel Works facility.
(4) Historically, it used charcoal from local forests for smelting iron ore in its furnace.
(5) Question not attempted

43. Consider the following statements regarding the historical development of the cotton textile industry:
I. The first successful modern cotton textile mill was established in Mumbai in 1854.
II. Ahmedabad emerged as a major centre due to its proximity to cotton-growing areas.
III. Post-independence, the industry remained completely centralized in Maharashtra and Gujarat.
IV. The powerloom sector eventually overtook the mill sector in terms of total cloth production.
V. The development of synthetic fibres created competition for the traditional cotton industry.
Which of the above statement(s) is/are correct?
(1) I, II, III and V only
(2) II, III, IV and V only
(3) I, III, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

44. The dominance of the powerloom sector in modern Indian textile production is primarily a conceptual application of which economic dynamic?
(1) Strict government monopolies banning all private textile mills across the whole nation.
(2) Cost benefits from decentralisation, lower overheads, and flexibility in the unorganised sector.
(3) The complete inability of the handloom sector to produce any tradable goods for the market.
(4) The exclusive reliance of powerlooms on imported synthetic yarn from foreign manufacturers.
(5) Question not attempted

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45. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The cooperative sugar mill model has been remarkably successful in Maharashtra.
Reason (R): The farmers in Maharashtra are integrated as stakeholders in the mills, ensuring a steady supply of cane, timely harvesting, and equitable profit sharing.
Select the correct answer using the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

46. Which of the following is a primary feature of the synthetic and man-made fibre industry?
(1) It relies entirely on agricultural cash crops like cotton and jute.
(2) It is highly constrained by the seasonal harvesting of raw materials.
(3) It is an obsolete industry that has been completely replaced by natural silk.
(4) Its raw materials are fundamentally derived from petrochemicals and wood pulp.
(5) Question not attempted

47. Consider the following statements regarding the Rourkela Steel Plant:
I. It is located in the state of Odisha.
II. It was established with technical collaboration from West Germany.
III. It is a mini steel plant utilizing electric arc furnace technology.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

48. Identify the correct pair representing the foundational technology used in modern mini steel plants.
(1) Mini Steel Plant - Traditional Blast Furnace
(2) Mini Steel Plant - Electric Arc Furnace
(3) Mini Steel Plant - Open Hearth Furnace
(4) Mini Steel Plant - Bessemer Converter
(5) Question not attempted

49. Match List I with List II and select the correct answer using the options given below:
List I: Initiative/Sector
A. Textile Parks
B. Sugar Clusters
C. Powerloom Sector
D. Jute Industry
List II: Associated Objective/Feature
i. Integrated infrastructure for global competitiveness
ii. Pooling resources for better recovery and by-product utilization
iii. Dominates decentralized cloth production
iv. Concentrated along the banks of the Hooghly river
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-ii, C-iii, D-i
(5) Question not attempted

50. Consider the following statements regarding the seasonal nature of the sugar industry:
Statement I: Sugar mills operate throughout the year at full capacity without interruption.
Statement II: The industry is seasonal because sugarcane must be crushed soon after harvest to prevent a drop in sucrose content, restricting crushing to harvest months.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

51. Consider the following statements regarding the historical development of India's iron and steel plants:
I. TISCO was the first integrated plant in the private sector.
II. Bhilai was established as a public sector giant in Chhattisgarh.
III. Bokaro was established with Indo-Soviet collaboration.
IV. Vizag Steel Plant was built inland to avoid

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migrate to North India.
(5) Question not attempted

13. Consider the following statements regarding the powerloom sector in the Indian textile industry:
I. It has historically witnessed massive growth due to decentralisation post-independence.
II. It operates primarily in the decentralized and unorganised sector.
III. It accounts for the dominant share of total cloth production in India today.
IV. It utilizes electrical power, making it more efficient than traditional handlooms.
V. It has completely replaced the organized mill sector, which no longer exists in India.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III, IV and V only
(3) I, II, III and IV only
(4) I, III, IV and V only
(5) Question not attempted

14. Which of the following is a correct pair regarding the raw material source of the synthetic and man-made fibre industry?
(1) Viscose Rayon - Petrochemical derivatives and synthetic polymers
(2) Nylon - Natural wood pulp and plant-based cellulose
(3) Acrylic - Natural silk proteins found in mulberry trees
(4) Polyester - Coal, air, water and petroleum products
(5) Question not attempted

15. Arrange the following states from North to South based on their geographical location, which are also prominent centers of the silk industry:
I. Jammu & Kashmir
II. West Bengal
III. Karnataka
Select the correct order from the options given below:
(1) I, II, III
(2) I, III, II
(3) II, I, III
(4) III, II, I
(5) Question not attempted

16. Which of the following factors does NOT contribute to the heavy concentration of the jute textile industry in West Bengal?
(1) Proximity to the jute producing areas of the Ganga-Brahmaputra delta
(2) Dry and arid climate ideal for spinning jute yarn without moisture
(3) Abundant water supply from the Hooghly river for processing raw jute
(4) Availability of cheap labour from neighboring states
(5) Question not attempted

17. Match List I with List II and select the correct answer using the options given below:
List I: Silk Producing State
A. Karnataka
B. West Bengal
C. Jammu & Kashmir
D. Assam
List II: Dominant Silk/Feature
i. Bivoltine silk due to temperate climate
ii. Muga silk monopoly
iii. Leading producer of Mulberry silk
iv. Traditional Murshidabad silk centers
(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-iv, C-i, D-ii
(3) A-iii, B-i, C-iv, D-ii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

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18. The traditional sugarcane belt in India is primarily distributed across which of the following regions?
(1) The subtropical Indo-Gangetic plain and tropical peninsular India
(2) The arid deserts of western Rajasthan and the dry Rann of Gujarat
(3) The lower Himalayas and the cold, high-altitude trans-Himalayan valleys
(4) The coastal mangroves of the Sundarbans and the high-salinity marshlands
(5) Question not attempted

19. Consider the following statements regarding the sugar industry in Uttar Pradesh and Maharashtra:
I. Uttar Pradesh has historically had a longer crushing season compared to Maharashtra.
II. Sugarcane in Maharashtra generally yields a higher sucrose recovery rate than in Uttar

59. The Salem steel plant, a prominent facility in South India, specializes primarily in the production of:
(1) Heavy structural steel for bridges
(2) Mild steel for construction rebar
(3) Pig iron for export
(4) High-quality stainless steel and special steel
(5) Question not attempted

60. Which is the most appropriate reason why mini steel plants are more geographically decentralized than integrated steel plants?
(1) They rely entirely on imported raw materials from foreign markets for all their production needs.
(2) They use power and scrap iron, removing the need to locate near coal and iron ore mines.
(3) They require massive amounts of land that are only available outside major industrial belts.
(4) They are government-mandated to be built in every district to promote regional employment.
(5) Question not attempted

61. The raw material requirement for the Bhilai Steel Plant, a public sector giant, includes iron ore primarily sourced from the local mines of:
(1) Kudremukh
(2) Ratnagiri
(3) Dalli-Rajhara
(4) Mayurbhanj
(5) Question not attempted

62. Consider the following statements regarding the synthetic fibre industry:
Statement I: The synthetic and man-made fibre industry is heavily dependent on agricultural climate conditions.
Statement II: The distribution of the synthetic fibre industry is largely linked to the availability of petrochemical derivatives rather than agricultural fields.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

63. Identify the correct statement regarding the challenges faced by the jute textile industry.
(1) It faces stiff competition from synthetic packaging materials in the international market.
(2) It suffers from a severe shortage of raw water in the Hooghly basin for the retting process.
(3) It has lost its entire market because jute is highly toxic for any food-grade packaging.
(4) It is restricted by laws to only produce ropes, not high-quality woven packaging materials.
(5) Question not attempted

64. The Bhadravati steel plant in South India is located along the banks of which river?
(1) Cauvery
(2) Bhadra
(3) Krishna
(4) Godavari
(5) Question not attempted

65. What is the primary cause for the shifting trend of the sugar industry towards the western and southern states of India, notably Maharashtra?
(1) The cooler climate of the north completely destroys the sugarcane crop during winters.
(2) Peninsular sugarcane has higher sucrose content and a longer crushing season for the mills.
(3) The northern states have completely banned the cultivation of sugarcane for industrial use.
(4) Southern states provide free electricity exclusively to sugar mills owned by local cooperatives.
(5) Question not attempted

66. Identify the incorrect statement regarding the powerloom sector.
(1) It produces less total fabric volume annually than the traditional handloom sector.
(2) It operates predominantly in the decentralized sector.
(3) It utilizes electrical power to operate weaving machinery.
(4) It has played a key role in the decentralization

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of textile production post-independence.
(5) Question not attempted

67. Which of the following is NOT a required geographical or climatic condition for the traditional concentration of cotton textile mills in a region?
(1) Proximity to black soil regions for raw cotton
(2) Humid climate facilitating yarn spinning without breaking
(3) High altitude mountainous terrain for cooling machinery
(4) Access to port facilities for import and export
(5) Question not attempted

68. The concept of a "weight-losing industry" is best applied to which of the following industries, forcing its manufacturing units to be located near the raw material source?
(1) Synthetic fibre industry
(2) Readymade garment industry
(3) Electronics industry
(4) Sugar industry
(5) Question not attempted

69. Which of the following states is traditionally the leading producer of mulberry silk in India?
(1) Punjab
(2) Rajasthan
(3) Karnataka
(4) Gujarat
(5) Question not attempted

70. Consider the following statements regarding the Maharashtra sugar model:
Statement I: The sugar industry in Maharashtra is dominated by private multinational corporations.
Statement II: Cooperative sugar mills form the backbone of the sugar industry in Maharashtra.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

71. Identify the correct pair regarding government initiatives in industrial sectors.
(1) Textile Parks - Centralized monopoly under a single public sector unit
(2) Cooperative Sugar Mills - Exclusively funded by foreign direct investment
(3) Powerloom Sector - Strictly regulated and confined only to coastal cities
(4) Sugar Clusters - Designed to improve infrastructure, by-product utilization, and competitiveness
(5) Question not attempted

72. Find the odd one out among the following steel plants based on their fundamental operational technology.
(1) Mini steel plants
(2) Bhilai Steel Plant
(3) Bokaro Steel Plant
(4) Durgapur Steel Plant
(5) Question not attempted

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73. Which of the following represents the most appropriate reason for the success of cooperative sugar mills in Maharashtra?
(1) The state government provides 100% subsidy for all sugar produced in these mills.
(2) Maharashtra imports cheap raw sugar from Brazil to process in these cooperatives.
(3) Farmers have a direct stake, ensuring assured cane supply and mutual profit sharing.
(4) The cooperatives use only electric arc furnaces which lower the cost of sugar refining.
(5) Question not attempted

74. In which city was the first successful modern mechanized cotton textile mill established in India in 1854?
(1) Mumbai
(2) Kolkata
(3) Ahmedabad
(4) Surat
(5) Question not attempted

75. What was a major effect of the partition of India in 1947 on the jute textile industry in West Bengal?
(1) The mills gained exclusive global monopoly over all synthetic and plastic packaging

materials.
(2) All existing jute mills were physically relocated from West Bengal to industrial zones in Punjab.
(3) Jute cultivation was strictly banned by the newly formed government in West Bengal at that time.
(4) The mills lost their raw material base as major jute areas went to East Pakistan (Bangladesh).
(5) Question not attempted

76. Identify the incorrect statement regarding the differentiation between natural and synthetic textiles.
(1) Cotton and jute are natural fibres derived from specifically grown agricultural crops.
(2) The synthetic fibre industry is highly centralized and must be located near coal mines.
(3) Silk is a natural fibre derived from sericulture and the rearing of silkworms on trees.
(4) Nylon and polyester are man-made fibres derived from petrochemicals and crude oil products.
(5) Question not attempted

77. The first integrated steel plant in India, TISCO, was established at Jamshedpur. What was the original name of this village before it was renamed?
(1) Kalimati
(2) Sijua
(3) Sakchi
(4) Ghatshila
(5) Question not attempted

78. Consider the following statements regarding the Rourkela Steel Plant:
Statement I: It was the first integrated steel plant in the public sector in India set up with German collaboration.
Statement II: It was strategically located in the iron ore rich region of Odisha to minimize raw material transport costs.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

79. The application of electric arc furnace technology in mini steel plants provides which of the following specific environmental or operational advantages?
(1) It uses recycled steel scrap, reducing the need for iron ore mining and large blast furnaces.
(2) It allows for the direct smelting of bauxite into pure iron without using any coal in the process.
(3) It completely eliminates the need for any electricity or power in the steel manufacturing industry.
(4) It enables the production of stainless steel from pure sugarcane bagasse and agricultural waste products.
(5) Question not attempted

80. Which of the following is the most appropriate description of a "sugar cluster" as promoted by government initiatives?
(1) A geographic concentration of competing foreign sugar importers looking to exploit the Indian market.
(2) An integrated zone where sugar mills and distilleries operate to maximize by-product utilization.
(3) A central government building that dictates global sugar prices and controls all sugar export licenses.
(4) A purely agricultural zone where no factories are allowed to be constructed by law or regulations.
(5) Question not attempted

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ANSWERS

1. (2) It utilizes heavy and weight-losing raw materials, requiring plant locations near raw material sources.
The iron and steel industry is fundamentally characterized as a weight-losing industry. This means the weight of the raw materials like iron ore and coal is significantly greater than the weight of the finished steel produced. Consequently, manufacturing units are strategically located near the sources of these bulky raw materials to minimize expensive transportation costs for the industry.

2. (1) Both Statement I and Statement II are correct
The Tata Iron and Steel Company represents the pioneering integrated steel plant in India, established by Jamsetji Tata in the early twentieth century. Its location in Jamshedpur was chosen primarily for the abundant water supply provided by the confluence of the Subarnarekha and Kharkai rivers. Proximity to iron ore, coal, and manganese deposits further supported its successful operations.

3. (3) A-iii, B-i, C-iv, D-ii
India's major public sector steel plants are distributed across resource-rich states to optimize production efficiency. The Bhilai plant is located in Chhattisgarh, while the Durgapur plant operates in West Bengal. Rourkela is situated in Odisha, and the Bokaro plant is established in Jharkhand. These locations were strategically selected during the five-year plans to utilize local raw material reserves.

4. (4) It created a public sector giant built with technological and financial help from the Soviet Union.
The Bhilai Steel Plant was established in Chhattisgarh as a landmark project of international cooperation during the Second Five Year Plan. It received significant technical and financial assistance from the Soviet Union to boost India's industrial capacity. This collaboration aimed to develop a self-reliant public sector in heavy industry and utilized local iron ore from the Dalli-Rajhara mines.

5. (3) I and II only
During the Second Five Year Plan, the Indian government established several integrated steel plants under the public sector. The Durgapur plant was developed with British collaboration in West Bengal, whereas the Rourkela plant was built with German assistance in Odisha. These units are located in the eastern industrial belt of India, rather than in the southern state of Andhra Pradesh.

6. (2) Soviet Union
The Bokaro Steel Plant, established in Jharkhand, was the fourth integrated public sector plant in India. It was developed with technical and financial assistance from the Soviet Union, starting in the 1960s. This plant was designed with a focus on maximizing indigenous equipment and materials, significantly contributing to the expansion of India's heavy engineering and steel manufacturing sectors.

7. (1) Both A and R are true and R is the correct explanation of A.
The Visakhapatnam Steel Plant, often called Vizag Steel, possesses a unique geographical advantage by being India's first shore-based integrated steel plant. This coastal location is highly beneficial for the logistics of the iron and steel industry. It facilitates the cost-effective import of high-quality coking coal from abroad and simplifies the export of finished steel products to international markets.

8. (1) Bhadravati relies solely on coking coal imports from Australia due to a lack of local coal or forests.
The Bhadravati steel plant in Karnataka, originally known as Mysore Iron and Steel Works, is situated near the river Bhadra. Historically, it relied on charcoal from local forests for smelting due to the absence of nearby coal mines. Later, it transitioned to electric power. The claim that it depends solely on Australian coal imports for smelting is factually incorrect.

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9. (3) I, II, III and IV
Mini steel plants represent a decentralized segment of the iron and steel industry. These units primarily utilize electric arc furnaces for melting steel scrap or sponge iron, rather than smelting iron ore in large blast furnaces. They require less capital investment compared to integrated plants and are capable of producing specific grades of mild steel and various steel alloys.

10. (1) Bhilai
Mumbai, Ahmedabad, and Surat are historically prominent centers for the cotton textile industry in India, benefitting from proximity to raw material growing regions and port facilities. In contrast, Bhilai is a major industrial city primarily known for its integrated steel plant. Therefore, Bhilai does not belong to the same industrial category as the other cities listed in the grouping.

11. (4) A-iii, B-iv, C-i, D-ii
The Indian textile industry consists of diverse sectors with distinct characteristics. The handloom sector is traditional and labor-intensive, while the mill sector involves organized, large-scale production. Powerlooms dominate the decentralized sector using mechanized weaving. Additionally, the synthetic fiber industry relies on petrochemicals for production. Matching these features correctly highlights the complex structure of textile manufacturing across the various regions.

12. (2) The growth of power and transport networks allowed mills to move closer to local consumer markets.
Historically, cotton mills were concentrated near raw material sources in western India. However, post-independence, the industry witnessed significant decentralization. This shift was primarily driven by the expansion of the railway network and the widespread availability of electricity. These infrastructure improvements allowed mills to be established closer to diverse consumer markets, reducing the need for proximity to the cotton-growing regions.

13. (3) I, II, III and IV only
The powerloom sector has grown significantly post-independence, becoming a dominant force in India's textile production. It operates within the decentralized and unorganized sector, utilizing electrical power for mechanized weaving. While it accounts for the largest share of cloth production, the organized mill sector still exists in India. Therefore, the assertion that powerlooms have completely eliminated the mill sector is incorrect.

14. (4) Polyester - Coal, air, water and petroleum products
The synthetic and man-made fiber industry utilizes various chemical and petrochemical derivatives as its primary raw material base. Polyester is produced using complex chemical processes involving coal, air, water, and petroleum products. In contrast, fibers like viscose rayon are derived from natural cellulose or wood pulp, while nylon is a purely synthetic polymer not derived from natural plant-based silk proteins.

15. (1) I, II, III
India's prominent silk industry centers are geographically distributed from the northern tip to the southern peninsula. Jammu and Kashmir, located in the north, is famous for its high-quality temperate silk. Moving southwards, West Bengal serves as a major silk-weaving hub in the east. Finally, Karnataka is the leading producer of mulberry silk in the southern part of the country.

16. (2) Dry and arid climate ideal for spinning jute yarn without moisture
The concentration of the jute industry in West Bengal is driven by several favorable geographical factors. These include the proximity to raw jute production in the Ganga-Brahmaputra delta and the abundant fresh water from the Hooghly river required for processing. However, jute manufacturing requires a humid climate for spinning. An arid or dry climate is unsuitable for this specific textile process.

17. (2) A-iii, B-iv, C-i, D-ii
India produces various types of silk, each associated with specific geographic regions. Karnataka is the leading producer of mulberry silk in the south. West Bengal has traditional weaving centers in Murshidabad. Jammu and Kashmir produces high-quality bivoltine silk due to its temperate climate. Assam holds a global monopoly on the production of golden Muga silk, which is unique to the region.

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was made possible by the development of a nationwide railway network and the availability of electricity in various regions. These factors allowed manufacturers to set up mills closer to diverse consumer markets, as cotton is a pure material that does not lose weight during transport.

36. (2) Both Statement I and Statement II are incorrect
The Bokaro Steel Plant, located in Jharkhand, was established with technical and financial assistance from the Soviet Union, not the United Kingdom. Furthermore, it is an inland integrated steel plant rather than a coastal one. Its primary objective was to expand India's domestic steel production capacity by utilizing local raw materials. Therefore, both statements regarding its collaboration and geographical nature are factually incorrect.

37. (3) III and IV only
The sugar industry is inherently seasonal because it depends on the harvesting of sugarcane, which must be crushed quickly to prevent sucrose loss. Furthermore, sugarcane grown in tropical Maharashtra typically has a higher sucrose content than the varieties grown in subtropical Uttar Pradesh. Therefore, statements claiming the industry is independent of seasons or that Maharashtra has lower sucrose content than Uttar Pradesh are incorrect.

38. (2) Sugarcane bagasse
Integrated iron and steel plants require specific mineral inputs for the production of steel. Coking coal serves as fuel, limestone acts as a flux to remove impurities, and manganese ore is added to increase the strength of the final product. Sugarcane bagasse, however, is a fibrous byproduct of the sugar industry and has no role in the traditional smelting or refining of iron.

39. (4) A-iv, B-ii, C-i, D-iii
Different Indian industries face unique logistical and economic characteristics. The sugar industry is highly seasonal and relies on perishable raw materials. The jute industry struggles with competition from synthetic packaging. Mini steel plants are characterized by their use of scrap metal and electric power. Meanwhile, the cotton textile industry has seen a decentralized shift from its original raw material sources toward regional consumer markets.

40. (1) It minimizes costs for exporting steel and importing high-grade coking coal from abroad.
The Visakhapatnam (Vizag) Steel Plant is strategically located on the coast of Andhra Pradesh. This shore-based location offers significant logistical advantages, particularly in international trade. It allows for the direct and cost-effective import of high-quality coking coal required for the furnaces. Simultaneously, it facilitates the easy export of finished steel products to global markets, bypassing the need for expensive inland transportation for those specific goods.

41. (1) I, II, III
India's integrated steel plants are distributed across various latitudes. The Bokaro Steel Plant is located in the northern state of Jharkhand. Further south is the Bhilai Steel Plant, situated in the central state of Chhattisgarh. The Salem Steel Plant is located even further south in the state of Tamil Nadu. This sequence correctly reflects their geographical positions from the north to the south of the country.

42. (1) It relies on high-grade coking coal deposits located within the local Bhadravati region.
The Bhadravati steel plant in Karnataka was originally known as the Mysore Iron and Steel Works. Since there are no local coking coal deposits in the region, the plant historically used charcoal from nearby forests for smelting. Later, it shifted to using hydroelectric power and some imported coal. The claim that it relies on local coking coal deposits within the Bhadravati region is factually incorrect.

43. (4) I, II, IV and V only
The cotton textile industry has evolved since the first modern mill was established in Mumbai in 1854. Ahmedabad became a hub due to raw material proximity, and powerlooms eventually dominated cloth production. While synthetic fibers provided competition, the industry did not remain completely centralized in Maharashtra and Gujarat post-independence. Instead, it decentralized across various states due to improved transport and power infrastructure nationwide.

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Furthermore, Mumbai's port facilities facilitated the import of modern machinery and the export of finished textile goods.

27. (4) I, II and IV only
The Vizag Steel Plant is famous for its coastal location, which provides logistical advantages for international trade. The Salem plant in Tamil Nadu uses local ore and is known for high-grade stainless steel. Bhadravati is located on the river Bhadra. Since the Vizag plant has coastal benefits, Salem doesn't primarily use Brazilian ore, and Vizag had Soviet collaboration, statements I, II, and IV are incorrect.

28. (2) Silk Industry origin - Rajasthan
The concentration of major industries in India follows specific geographical patterns based on raw material availability and historical development. Jute is concentrated in West Bengal, and cooperative sugar mills are highly successful in Maharashtra. Cotton textiles originated in Mumbai and Ahmedabad. However, the silk industry is traditionally associated with states like Karnataka, West Bengal, and Jammu and Kashmir, rather than having its origin in Rajasthan.

29. (1) TISCO Jamshedpur, Bhilai Steel Plant, Bokaro Steel Plant, Vizag Steel Plant
The development of India's iron and steel industry followed a specific chronological timeline. TISCO was established in 1907 as the first integrated plant. Post-independence, the Bhilai Steel Plant was set up during the 1950s. The Bokaro Steel Plant followed in the 1960s with Soviet help. Finally, the Visakhapatnam (Vizag) Steel Plant was established later as India's first shore-based integrated steel manufacturing facility.

30. (4) They require massive land areas and fully integrate iron ore smelting in blast furnaces.
Mini steel plants are smaller, decentralized units that differ significantly from integrated steel plants. They typically utilize electric arc furnaces to process steel scrap or sponge iron, which requires far less land and capital. Unlike integrated plants, they do not perform the primary smelting of iron ore in large blast furnaces. Therefore, the requirement for massive land and integrated smelting is not a characteristic feature.

31. (1) A-ii, B-i, C-iv, D-iii
Several Indian cities have earned nicknames reflecting their historical importance in the cotton textile industry. Mumbai is known as the "Cottonopolis of India" due to its massive concentration of mills. Ahmedabad is often called the "Manchester of India." In the south, Coimbatore is referred to as the "Manchester of South India," while Kanpur holds the title of "Manchester of North India" for the region.

32. (2) Chhattisgarh
The Bhilai Steel Plant is a major integrated steel manufacturing unit established during the Second Five Year Plan with Soviet collaboration. It is located in the Durg district of modern-day Chhattisgarh. The plant was strategically positioned to utilize the rich iron ore deposits from the Dalli-Rajhara mines and coal from the nearby Korba and Kargali regions, boosting industrial growth in central India.

33. (2) I, II and III
The Indian silk industry is diverse, with several states contributing to its production. Karnataka is the country's leading producer of mulberry silk. West Bengal has a long tradition of silk weaving, particularly in centers like Murshidabad. Jammu and Kashmir produces high-quality silk, benefitting from a temperate climate suitable for specific silkworm varieties. Together, these states represent the major hubs of silk production and sericulture.

34. (1) The Hooghly basin provides abundant fresh water required for retting the jute fibre.
The concentration of the jute industry in West Bengal, specifically along the Hooghly river, is due to critical geographical advantages. Processing raw jute requires a process called retting, which involves soaking the stalks in water to separate the fibers. The Hooghly basin provides the vast quantities of fresh water needed for this. Additionally, the region's humid climate and proximity to jute-growing areas support manufacturing.

35. (1) Both A and R are true and R is the correct explanation of A.
Since independence, the cotton textile industry in India has moved beyond its traditional centers in Maharashtra and Gujarat. This decentralization

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70. (4) Statement I is incorrect but Statement II is correct
The sugar industry in Maharashtra is not characterized by the dominance of private multinational corporations. Instead, its success and structure are built upon a robust network of cooperative sugar mills. These cooperatives are owned and operated by the farmers themselves, who serve as both the suppliers of sugarcane and the primary stakeholders. Therefore, the statement regarding private multinational dominance is factually incorrect for this region.

71. (4) Sugar Clusters - Designed to improve infrastructure, by-product utilization, and competitiveness
Government initiatives aim to modernize traditional industries through collective infrastructure and resource pooling. Sugar clusters are specifically designed to improve local infrastructure and encourage the efficient use of by-products like molasses and bagasse. This integrated approach helps reduce waste, lower production costs, and enhance the overall competitiveness of the sugar industry in the domestic and international markets, supporting rural economies and sustainable development.

72. (1) Mini steel plants
Bhilai, Bokaro, and Durgapur are large-scale integrated steel plants that typically use blast furnaces to process iron ore into steel. In contrast, mini steel plants operate on a smaller, decentralized scale and primarily utilize electric arc furnace technology. Because mini steel plants rely on scrap metal and electricity rather than the full integration of primary smelting, they represent a different operational technology category.

73. (3) Farmers have a direct stake, ensuring assured cane supply and mutual profit sharing.
The cooperative model's success in Maharashtra stems from the direct involvement of sugarcane farmers as owners of the processing mills. This ownership ensures that the farmers have a vested interest in providing a high-quality, steady supply of cane to their own factories. The system also promotes timely harvesting and guarantees that the profits generated from the sale of sugar are shared equitably among the members.

74. (1) Mumbai
While early attempts were made elsewhere, the first successful modern mechanized cotton textile mill in India was established in Mumbai in 1854. This mill, founded by Cowasjee Nanabhoy Davar, marked the beginning of India's industrial revolution in the textile sector. Mumbai's location provided the necessary capital, entrepreneurship, port access, and proximity to raw cotton growing regions to support the mill's long-term success.

75. (4) The mills lost their raw material base as major jute areas went to East Pakistan (Bangladesh).
The partition of India in 1947 had a severe impact on the jute industry in West Bengal. While most of the jute mills remained in India (specifically along the Hooghly river), the vast majority of high-quality jute-producing fertile lands were located in East Pakistan (now Bangladesh). This created a critical shortage of raw material for the Indian mills, forcing the country to significantly expand its own jute cultivation.

76. (2) The synthetic fibre industry is highly centralized and must be located near coal mines.
Natural fibers like cotton, jute, and silk are derived from agriculture and sericulture. In contrast, synthetic fibers are man-made products of the petrochemical industry. The synthetic fiber industry is not restricted to locations near coal mines; instead, it is often decentralized or located near petrochemical plants and consumer markets. Therefore, the claim that it is highly centralized and must be near coal mines is incorrect.

77. (3) Sakchi
The Tata Iron and Steel Company (TISCO) was established in 1907 in a small village originally named Sakchi in the Singhbhum district. This location was chosen for its proximity to iron ore, coal, and water. Following the successful establishment of the steel plant and the growth of the surrounding industrial town, the settlement was later renamed Jamshedpur in honor of the founder, Jamsetji Tata.

78. (1) Both Statement I and Statement II are correct
The Rourkela Steel Plant was the first integrated public sector plant established in India, developed with technical assistance from German firms. Its location in Odisha was chosen strategically to

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44. (2) Cost benefits from decentralisation, lower overheads, and flexibility in the unorganised sector.
The dominance of the powerloom sector in modern India is driven by the economic advantages of decentralization. Operating primarily in the unorganized sector, powerlooms benefit from lower overhead costs and greater operational flexibility compared to large, organized mills. This allows them to respond quickly to market changes and produce a significant portion of the country's fabric more cost-effectively than traditional or large-scale alternatives.

45. (1) Both A and R are true and R is the correct explanation of A.
The cooperative sugar mill model has been highly successful in Maharashtra because it integrates the interests of the farmers and the processors. By making local farmers shareholders in the mills, the system ensures a steady and reliable supply of sugarcane. This collective ownership also facilitates timely harvesting and the equitable sharing of profits, fostering rural development and sustaining the industry's long-term growth.

46. (4) Its raw materials are fundamentally derived from petrochemicals and wood pulp.
Unlike the cotton and jute industries which depend on agricultural crops, the synthetic and man-made fiber industry is based on chemical processes. Its primary raw materials include wood pulp for fibers like rayon and petrochemical derivatives for fibers like polyester and nylon. This makes the industry less dependent on seasonal agricultural cycles and more linked to the availability of chemicals and oil-based products.

47. (1) I and II only
The Rourkela Steel Plant is an integrated steel manufacturing unit located in the Sundargarh district of Odisha. It was established in the 1950s as a public sector project with technical collaboration from West Germany. Unlike mini steel plants that use electric arc furnaces, Rourkela is a large-scale integrated facility utilizing blast furnace technology to produce steel from primary iron ore and other raw materials.

48. (2) Mini Steel Plant - Electric Arc Furnace
Mini steel plants represent a decentralized and modern segment of the iron and steel industry. The foundational technology used in these units is the electric arc furnace, which melts steel scrap or sponge iron to produce steel. This technology differs from the massive blast furnaces used in integrated steel plants, allowing mini steel plants to be smaller, more flexible, and located closer to markets.

49. (2) A-i, B-ii, C-iii, D-iv
Various government and industrial initiatives address specific needs across sectors. Textile parks provide integrated infrastructure for global competitiveness. Sugar clusters aim to pool resources for better by-product utilization. The powerloom sector has become the dominant producer in the decentralized textile industry. Furthermore, the jute industry remains heavily concentrated along the banks of the Hooghly river in West Bengal due to historical and geographical factors.

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50. (4) Statement I is incorrect but Statement II is correct
The sugar industry is inherently seasonal rather than a year-round operation. Sugarcane is a perishable crop that begins to lose its sucrose content almost immediately after being harvested. To ensure maximum sugar recovery, the cane must be crushed within a very short timeframe. This technical constraint restricts the operation of sugar mills only to the months when the sugarcane harvest is active.

51. (3) I, II and III only
India's steel industry includes the pioneering private sector TISCO and various public sector giants. Bhilai was established in Chhattisgarh and Bokaro in Jharkhand with Soviet collaboration. However, the Visakhapatnam (Vizag) Steel Plant was strategically built as a shore-based facility on the coast of Andhra Pradesh to facilitate maritime trade, not as an inland plant. Therefore, statements I, II, and III are factually correct.

52. (4) West Bengal
The Durgapur Steel Plant is a major integrated steel facility established during the Second Five Year Plan with assistance from the United Kingdom. It is located in the state of West Bengal.

18. (1) The subtropical Indo-Gangetic plain and tropical peninsular India
Sugarcane cultivation in India is primarily divided into two distinct regions based on climatic conditions. The subtropical belt encompasses the fertile Indo-Gangetic plains, including states like Uttar Pradesh. The tropical belt covers peninsular India, particularly Maharashtra, Karnataka, and Tamil Nadu. These regions provide the necessary warmth and moisture required for the successful growth of this seasonal and water-intensive cash crop.

19. (3) I only
The sugar industry in Maharashtra benefits from a tropical climate, which generally leads to a longer crushing season compared to the subtropical regions of Uttar Pradesh. Additionally, sugarcane grown in Maharashtra typically yields a higher sucrose recovery rate. The cooperative model is also exceptionally successful in Maharashtra. Therefore, the statement claiming Uttar Pradesh has a longer crushing season than Maharashtra is factually incorrect.

20. (1) Both A and R are true and R is the correct explanation of A.
The sugar industry is fundamentally seasonal because its primary raw material, sugarcane, is highly perishable. Once harvested, the sucrose content in the cane begins to decline rapidly due to moisture loss. This necessitates immediate crushing near the fields. Consequently, sugar mills can only operate during the specific harvesting months of the year, leading to significant logistical and financial challenges.

21. (3) They are owned by local sugarcane farmers acting as collective shareholders and suppliers.
The cooperative sugar mill model in Maharashtra is based on the collective ownership of processing units by the local farmers. In this system, the farmers act as both shareholders and the primary suppliers of raw sugarcane to the mills. This integration ensures a steady supply of raw materials, timely harvesting, and the equitable distribution of profits among the rural farming community.

22. (1) Both Statement I and Statement II are correct
Government initiatives like textile parks and sugar clusters are designed to provide modern, shared infrastructure for industrial units. These clusters allow smaller manufacturers to access common facilities and advanced technology that they could not afford individually. By pooling resources and improving efficiency, these initiatives aim to reduce production costs and enhance the global competitiveness of Indian textile and sugar products.

23. (4) I, II and III only
The production of iron and steel requires specific raw materials for the smelting and refining processes. Coking coal is essential as a fuel and reducing agent in blast furnaces. Limestone is used as a flux to remove impurities from the molten metal. Manganese is added to the final product to increase strength and toughness. Bauxite, however, is not used here.

24. (1) It was the first integrated steel plant in India.
The Tata Iron and Steel Company, established in 1907 at Jamshedpur, holds the distinction of being India's first integrated steel plant. Founded by Jamsetji Tata and established by Dorabji Tata, it marked the beginning of modern heavy industry in the country. This private sector initiative successfully integrated various stages of steel production, including raw material procurement, smelting, and manufacturing finished products.

25. (3) A-iii, B-i, C-ii, D-iv
India's major public sector steel plants were established through international collaborations during the mid-twentieth century. The Bhilai plant was built with Soviet assistance, while Durgapur received help from the United Kingdom. Rourkela was developed with German technology. Later, the Bokaro Steel Plant was also established with Soviet collaboration, marking a different phase of industrial development focused on indigenous technological growth and capacity.

26. (1) Proximity to black soil regions, humid climate, and port facilities for importing machinery.
The rapid growth of the cotton textile industry in nineteenth-century Mumbai was driven by several favorable factors. Its proximity to the cotton-producing black soil regions of Maharashtra provided easy access to raw materials. The humid coastal climate was ideal for spinning yarn without frequent breakage.

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Dalli-Rajhara mines, which are located in the same region. This proximity significantly reduces transportation costs and ensures a steady supply of raw materials for the plant's blast furnaces, supporting its large-scale steel manufacturing operations.

62. (4) Statement I is incorrect but Statement II is correct
The synthetic and man-made fiber industry differs fundamentally from natural textiles like cotton or jute. It is not dependent on agricultural or climatic conditions, as its fibers are created through chemical processes. Instead, the distribution and success of this industry are linked to the availability of petrochemical derivatives and chemical raw materials. Therefore, the assertion that it depends on agricultural conditions is factually incorrect.

63. (1) It faces stiff competition from synthetic packaging materials in the international market.
The jute industry in India faces significant economic pressure due to the rise of synthetic alternatives. Products made from plastic and other synthetic polymers are often cheaper and more durable for packaging, which has reduced the global demand for traditional jute bags and textiles. This competition, along with high production costs, remains a primary challenge for the survival and modernization of the jute sector.

64. (2) Bhadra
The Bhadravati steel plant, formerly known as the Mysore Iron and Steel Works, is located in the Shimoga district of Karnataka. It was established on the banks of the river Bhadra to ensure a reliable and continuous water supply for its industrial operations. This location also allowed the plant to historically access charcoal from the surrounding forests and utilize iron ore from the nearby hills.

65. (2) Peninsular sugarcane has higher sucrose content and a longer crushing season for the mills.
The sugar industry has increasingly shifted toward Peninsular India, especially Maharashtra, because of favorable tropical climatic conditions. Sugarcane grown in the south and west typically has a higher sucrose content, leading to better sugar recovery. Furthermore, the tropical climate allows for a longer crushing season compared to the north, which improves the overall productivity and economic viability of the sugar mills.

66. (1) It produces less total fabric volume annually than the traditional handloom sector.
The powerloom sector has grown into the most significant part of India's textile industry, accounting for the largest share of total cloth production. It utilizes electrical power to drive mechanized looms, offering higher efficiency and volume than traditional handlooms. The claim that it produces less fabric than the handloom sector is incorrect, as it has largely overtaken both handlooms and the mill sector.

67. (3) High altitude mountainous terrain for cooling machinery
The location of cotton textile mills is influenced by specific factors like proximity to raw material regions, a humid climate to prevent yarn breakage, and access to port facilities for trade. However, high-altitude mountainous terrain is not a requirement for this industry. Modern cooling systems can manage machinery heat, and the logistical challenges of high-altitude locations would outweigh any minor benefits for the industry.

68. (4) Sugar industry
A weight-losing industry is one where the weight of the raw material is higher than that of the finished product. The sugar industry is a classic example because sugarcane is bulky and its sucrose content declines quickly after harvest. Additionally, the final weight of sugar produced is only a small fraction of the raw cane weight. This forces mills to be located near sugarcane fields.

69. (3) Karnataka
India is a major global producer of silk, with Karnataka leading the production of the mulberry variety. The state accounts for a significant portion of the country's total raw silk output. Favorable climatic conditions, a strong tradition of sericulture, and government support for silkworm rearing and reeling have established Karnataka as the central hub for mulberry silk production in the southern part of India.

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The plant was strategically positioned to utilize the iron ore from the Singhbhum region and coal from the Raniganj and Jharia coalfields, contributing significantly to the industrial development of eastern India.

53. (3) A-iv, B-iii, C-i, D-ii
Industrial activities in India are often specialized by region. Jammu and Kashmir is known for its high-quality silk production. West Bengal has the highest concentration of jute textile mills along the Hooghly river. Maharashtra is famous for its successful model of cooperative sugar mills. Chhattisgarh is the home of the Bhilai Steel Plant, a major public sector integrated steel manufacturing unit established during the mid-twentieth century.

54. (2) Its location in a major cotton-growing region provided easy access to raw materials.
Ahmedabad emerged as a premier center for the cotton textile industry, earning the title "Manchester of India," primarily due to its strategic location. It is situated in the heart of a major cotton-growing region in Gujarat, which ensured a steady and cost-effective supply of raw cotton. This proximity, combined with good transport links and entrepreneurial history, fueled the city's rapid industrial growth and dominance.

55. (4) I, II, IV and V only
Several statements accurately describe the landscape of Indian industry. The jute industry is concentrated in West Bengal, and silk centers are found in Karnataka and J&K. The powerloom sector is the dominant producer of textiles, and the Salem steel plant is located in South India. However, the sugar industry uses a weight-losing raw material, not one that gains weight, making statement III incorrect.

56. (1) Uttar Pradesh, Maharashtra, Tamil Nadu
The sugar industry in India is broadly distributed across different climatic zones. Uttar Pradesh is the leading producer in the subtropical northern belt. Moving south into the tropical peninsular region, Maharashtra is the dominant producer, followed by states like Tamil Nadu further south. This sequence from Uttar Pradesh to Maharashtra and then Tamil Nadu correctly follows the geographical progression from north to south.

57. (3) The cooperative sugar mill model has completely failed in Maharashtra due to low interest.
The sugar industry is a weight-losing sector that requires mills to be near sugarcane fields. Uttar Pradesh and Maharashtra are the leading producers in the country. The seasonal nature of the industry poses a significant challenge. However, the claim that the cooperative model has failed in Maharashtra is incorrect; it is actually widely recognized as a highly successful and dominant model in the state.

58. (1) Hooghly River
The TISCO plant at Jamshedpur was strategically located to ensure a reliable water supply for its industrial processes. It draws water from the Subarnarekha and Kharkai rivers, which meet at the plant's location. Additionally, Dimna Lake serves as a vital reservoir for the city and industry. The Hooghly River, however, is located hundreds of kilometers away in West Bengal and is not a source.

59. (4) High-quality stainless steel and special steel
The Salem Steel Plant, located in the state of Tamil Nadu, is a unit of the Steel Authority of India Limited. It is widely renowned for its specialized production capacity, focusing primarily on high-quality stainless steel. The plant produces various grades of stainless steel sheets, coils, and special steels used in domestic and industrial applications, making it a key facility in South India's industrial landscape.

60. (2) They use power and scrap iron, removing the need to locate near coal and iron ore mines.
Unlike integrated steel plants that require bulky iron ore and coal, mini steel plants utilize electric power and steel scrap as their primary inputs. Since these materials are more easily available across different regions and markets, mini steel plants do not need to be located near mineral deposits. This flexibility allows them to be geographically decentralized and established closer to urban centers and consumers.

61. (3) Dalli-Rajhara
The Bhilai Steel Plant in Chhattisgarh was established with a focus on utilizing local mineral resources to ensure cost-effective production. The plant sources its iron ore primarily from the

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take advantage of the rich iron ore deposits in the nearby region. This minimized transportation costs for heavy raw materials, making the plant's operations more efficient and contributing to the development of the eastern industrial belt.

79. (1) It uses recycled steel scrap, reducing the need for iron ore mining and large blast furnaces.
Electric arc furnace technology in mini steel plants offers distinct environmental and operational benefits. By utilizing recycled steel scrap as a primary feedstock, this process reduces the demand for newly mined iron ore and the energy-intensive primary smelting required in traditional blast furnaces. This makes mini steel plants more flexible, easier to establish in diverse locations, and more aligned with modern sustainable manufacturing practices.

80. (2) An integrated zone where sugar mills and distilleries operate to maximize by-product utilization.
A sugar cluster is an industrial zone designed to enhance the efficiency of the sugar manufacturing process. These clusters promote the integration of sugar mills with related facilities like distilleries and power plants. This allows for the maximum utilization of by-products such as molasses for ethanol production and bagasse for power generation. Such integration reduces operational costs, improves sustainability, and increases the overall competitiveness of the industry.

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"Positive Indigenisation Lists" to ban the import of specified defence equipment.
(5) Question not attempted

55. Match the emerging industries in List I with their prominent characteristics or associated hubs in List II.
List I: (Industry)
A. Diamond Cutting
B. Aerospace
C. IT and Software
D. Renewable Energy Manufacturing
List II: (Characteristic/Hub)
i. Surat
ii. Bangalore (Silicon Valley)
iii. HAL and ISRO ecosystems
iv. Solar PV modules and Wind turbines
(1) A-i, B-iii, C-ii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-ii, C-iii, D-iv
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

56. What is the historical cause that laid the foundation for Bangalore to emerge as India's premier aerospace and defence hub?
(1) Establishment of HAL and proximity to the Indian Institute of Science (IISc).
(2) Its coastal geography that allowed for the easy import of various aircraft parts during the World War II era.
(3) The discovery of massive bauxite reserves in the immediate vicinity of the city.
(4) A total ban on foreign aircraft operations in southern India post-independence.
(5) Question not attempted

57. Identify the odd one out in terms of feedstock utilized by different fertiliser plants in India.
(1) Natural Gas
(2) Naphtha
(3) Iron Ore
(4) Fuel Oil
(5) Question not attempted

58. Consider the following intermediate and final products:
I. Polymers (e.g., Polyvinyl Chloride)
II. Synthetic fibres (e.g., Polyester)
III. Elastomers (e.g., Synthetic Rubber)
IV. Surfactants (Detergents)
V. Portland Cement Clinker
Which of the following combinations correctly represents products derived from the petrochemical industry?
(1) I, II, III and V
(2) I, II, III and IV
(3) II, III, IV and V
(4) I, III, IV and V
(5) Question not attempted

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59. Identify the correctly matched pair regarding major Indian refineries and their operating companies.
(1) Panipat Refinery - Reliance Industries Limited (RIL)
(2) Jamnagar Refinery - Indian Oil Corporation Limited (IOCL)
(3) Mathura Refinery - Hindustan Petroleum Corporation Limited (HPCL)
(4) Kochi Refinery - Bharat Petroleum Corporation Limited (BPCL)
(5) Question not attempted

60. Select the correct geographic order of the following major IT hubs from North to South in India.
(1) Noida, Pune, Hyderabad, Chennai
(2) Pune, Noida, Chennai, Hyderabad
(3) Noida, Hyderabad, Pune, Chennai
(4) Hyderabad, Pune, Noida, Chennai
(5) Question not attempted

61. The Katni-Satna-Rewa belt in Madhya Pradesh is famously associated with the high concentration of which specific industry?
(1) Electronics and Semiconductors
(2) Aerospace manufacturing
(3) Cement industry
(4) Diamond cutting and polishing
(5) Question not attempted

62. Which segment accounts for the dominant share of revenue and exports within India's IT and Business Process Management (BPM) industry?
(1) Manufacturing of hardware components and systems
(2) Development of packaged software product solutions
(3) Semiconductor wafer fabrication
(4) IT Services and Software Development
(5) Question not attempted

7. The rapid growth of the IT industry in Bangalore, leading to its designation as the "Silicon Valley of India," can primarily be attributed to which cause?
(1) Extensive availability of rare earth metals found across the state's diverse geological formations.
(2) Proximity to key coastal trade routes facilitating easy export of hardware systems globally.
(3) The complete absence of state taxation on technological goods since independence.
(4) Establishment of public sector heavy industries and prestigious research institutions.
(5) Question not attempted

8. Consider the following statements regarding the cement industry in India:
I. The cement industry is a highly weight-losing industry, hence plants are primarily located near limestone deposits.
II. Rajasthan, Madhya Pradesh, and Andhra Pradesh are among the leading cement-producing states in India.
III. The availability of coal and electric power plays a negligible role in determining the location of cement plants.
Which of the given combinations of statements is correct?
(1) I and III
(2) II and III
(3) I and II
(4) I, II and III
(5) Question not attempted

9. Identify the odd one out among the following cities in the context of major IT and software service hubs in India.
(1) Hyderabad
(2) Pune
(3) Dhanbad
(4) Noida
(5) Question not attempted

10. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Surat exercises global dominance in the diamond cutting and polishing industry despite having no local diamond mines.
Reason (R): Surat benefits from a highly skilled traditional workforce and entrepreneurial networks supported by proximity to the Mumbai port for import and export.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

11. Which premier organisation serves as the primary research and development wing of the Ministry of Defence, playing a crucial role in India's defence manufacturing ecosystem?
(1) Hindustan Aeronautics Limited (HAL) specializing in aircraft
(2) Ordnance Factory Board (OFB) managing land systems production
(3) Bharat Electronics Limited (BEL) focusing on electronic systems
(4) Defence Research and Development Organisation (DRDO)
(5) Question not attempted

12. Consider the following statements regarding the renewable energy industry in India:
I. Rajasthan has emerged as a major manufacturing and generation hub for solar energy due to its high solar insolation and available wasteland.
II. Wind energy manufacturing hubs are predominantly concentrated in the northern landlocked states like Uttar Pradesh and Bihar.
III. The National Solar Mission aims to establish India as a global leader in solar energy.
IV. The renewable energy sector has seen emerging investments from both global players and domestic startups.
Which of the given combinations of statements is correct?
(1) I, II and III
(2) I, III and IV
(3) II, III and IV
(4) I, II, III and IV
(5) Question not attempted

13. A food processing firm wants to establish a new plant for manufacturing concentrated

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CHAPTER 16

Petrochemical, IT and Emerging Industries

1. Which of the following is the most primary feedstock used in the petrochemical industry for producing synthetic fibres, plastics, and elastomers?
(1) Iron ore and coking coal
(2) Natural gas and naphtha
(3) Bauxite and silica
(4) Limestone and gypsum
(5) Question not attempted

2. The Jamnagar refinery is recognised as the world's largest grass-roots refinery complex. Which corporate entity currently owns and operates this mega-refinery?
(1) Reliance Industries Limited (RIL)
(2) Indian Oil Corporation Limited (IOCL)
(3) Bharat Petroleum Corporation Limited (BPCL)
(4) Hindustan Petroleum Corporation Limited (HPCL)
(5) Question not attempted

3. Which of the following statements best describes the locational advantage of the major oil refineries established in Mumbai and Kochi?
(1) They are located near major onshore oil fields to reduce raw material transportation costs.
(2) They are positioned near heavy engineering hubs to supply direct fuels to automobile factories.
(3) They are port-based refineries established to easily process imported crude oil.
(4) They are situated primarily to utilize the vast hydroelectric power generated in the Western Ghats.
(5) Question not attempted

4. The distribution of the nitrogenous fertiliser industry in India is heavily dependent on the availability of which of the following raw material linkages?
(1) Rock phosphate deposits
(2) Low-grade iron ore
(3) Bauxite processing waste
(4) Natural gas pipelines
(5) Question not attempted

5. Match the major oil refineries in List I with the states where they are located in List II.
List I: (Oil Refinery)
A. Mathura Refinery
B. Kochi Refinery
C. Panipat Refinery
D. Mumbai Refinery
List II: (State)
i. Haryana
ii. Maharashtra
iii. Uttar Pradesh
iv. Kerala
(1) A-iii, B-iv, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-i, C-iv, D-ii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

6. India is globally recognised as the "Pharmacy of the World". This title is primarily attributed to India's dominance in which segment of the pharmaceutical industry?
(1) Manufacturing of patented life-saving surgical equipment
(2) Mass production of generic drugs and vaccines
(3) Exclusive production of traditional Ayurvedic medicines
(4) Monopoly over rare active pharmaceutical ingredients (APIs)
(5) Question not attempted

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(4) Coal
(5) Question not attempted

20. Select the correct order of the following major oil refineries in India from North to South.
(1) Panipat, Mathura, Mumbai, Kochi
(2) Mathura, Panipat, Kochi, Mumbai
(3) Panipat, Mumbai, Mathura, Kochi
(4) Mathura, Mumbai, Panipat, Kochi
(5) Question not attempted

21. Which Indian city is frequently referred to as the "Detroit of India" due to the heavy concentration of its automobile manufacturing industry?
(1) Gurgaon
(2) Pune
(3) Chennai
(4) Sanand
(5) Question not attempted

22. Identify the correct statement regarding the fertiliser industry in India.
(1) India is currently completely self-sufficient in the domestic production of all types of potassic (K) fertilisers.
(2) The HVJ gas pipeline enabled the setup of inland fertiliser plants near demand centers.
(3) The production of nitrogenous fertilisers does not require natural gas.
(4) Rajasthan is currently the largest producer of complex NPK fertilisers for the domestic agricultural market.
(5) Question not attempted

23. What is the most appropriate reason for the strategic significance of the petrochemical industry in modern economies?
(1) It acts as a primary substitute for the declining global demand for crude oil as a transport fuel.
(2) It requires very minimal capital investment and can be easily established in rural areas to promote local employment.
(3) It is the only industrial sector completely free of greenhouse gas emissions.
(4) It provides synthetic raw materials that replace natural materials like wood and natural rubber.
(5) Question not attempted

24. A major challenge currently faced by the emerging electronics and semiconductor industry in India is:
(1) Heavy dependence on imported active components and chips.
(2) An oversupply of advanced domestic semiconductor fabrication plants across the country.
(3) A lack of domestic demand for consumer electronics.
(4) Excessive availability of highly purified metallurgical grade silicon.
(5) Question not attempted

25. Match the industries in List I with their primary locational determinants in List II.
List I: (Industry)
A. Cement Industry
B. Food Processing Industry
C. Petrochemical Industry
D. Aerospace Industry
List II: (Locational Determinant)
i. Proximity to port or refinery
ii. Proximity to high-tech research institutions
iii. Proximity to bulky limestone deposits
iv. Proximity to perishable agricultural raw materials
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

26. Given below are two statements regarding the Food Processing Industry in India:
Statement I: The food processing industry provides a crucial forward linkage to the agriculture sector, thereby helping in reducing post-harvest losses.
Statement II: Mega Food Parks are established primarily to produce genetically modified seeds for farmers.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.

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(5) Question not attempted

27. Identify the odd one out among the following states in the context of leading cement manufacturing capacity in India.
(1) Rajasthan
(2) Madhya Pradesh
(3) Andhra Pradesh
(4) Tripura
(5) Question not attempted

28. Consider the following statements regarding India's defence manufacturing sector:
I. Ordnance factories are primarily responsible for producing arms, ammunition, and equipment for the armed forces.
II. The Defence Research and Development Organisation (DRDO) strictly engages in manufacturing commercial civilian aircraft.
III. The government has aggressively promoted indigenisation and increased the FDI limit in defence manufacturing to boost self-reliance.
Which of the given combinations is correct?
(1) I and II
(2) I and III
(3) II and III
(4) I, II and III
(5) Question not attempted

29. The startup ecosystem in India has witnessed the emergence of several "Unicorns." In startup parlance, a Unicorn refers to a privately held startup company valued at over:
(1) $100 Million
(2) $500 Million
(3) $1 Billion
(4) $10 Billion
(5) Question not attempted

30. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The pharmaceutical clusters in Hyderabad and Ahmedabad have seen rapid growth in export-oriented manufacturing.
Reason (R): The Indian patent law frameworks and availability of a skilled chemical engineering workforce have historically supported reverse engineering and bulk generic drug production.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

31. What defines an "innovation cluster" in the context of emerging industries and the startup ecosystem?
(1) A geographic concentration of interconnected businesses and associated institutions in a specific field.
(2) A government scheme designed to provide free land to any traditional manufacturing unit regardless of industry size.
(3) An agricultural zone dedicated solely to organic farming and traditional food processing.
(4) A financial zone exclusively meant for cryptocurrency mining operations.
(5) Question not attempted

32. Consider the following statements regarding the major centres of the automobile industry in India:
I. Maruti Suzuki's primary and oldest manufacturing facilities are located in the Gurgaon-Manesar cluster.
II. Hyundai Motor India established its first major manufacturing plant near Chennai.
III. Tata Motors has significant manufacturing operations in the Pune industrial cluster.
IV. The automobile industry is entirely confined to coastal areas for export purposes.
Which combination of statements is correct?
(1) I, II and III
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

33. Which of the following regions in Rajasthan is prominent for its concentration of cement manufacturing plants due to abundant high-grade limestone deposits?
(1) Jaisalmer-Barmer tract
(2) Chittorgarh-Nimbahera belt
(3) Alwar-Bharatpur region
(4) Bikaner-Churu area
(5) Question not attempted

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34. Which of the following statements about the Jamnagar refinery is incorrect?
(1) It is entirely owned and operated by the Government of India via a public sector undertaking.
(2) It operates with an extremely high Nelson Complexity Index, allowing it to process diverse heavy and sour crude grades.
(3) It comprises an integrated petrochemical complex producing aromatics and polymers.
(4) It possesses its own port and terminal facilities to handle large crude carriers.
(5) Question not attempted

35. Match the major IT industry hubs in List I with their predominant regional zones in List II.
List I: (IT Hub)
A. Noida
B. Chennai
C. Pune
D. Hyderabad
List II: (Regional Zone)
i. Western India
ii. Southern India (Deccan Plateau)
iii. Southern India (Coromandel Coast)
iv. National Capital Region (NCR)
(1) A-iv, B-iii, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

36. What is the primary cause for the large-scale establishment of the cement industry in the state of Madhya Pradesh?
(1) Availability of massive iron ore reserves
(2) Existence of deepwater port facilities that allow for the easy export of finished cement products.
(3) The high density of IT parks consuming cement
(4) Presence of vast high-quality limestone deposits within the Vindhyan ranges.
(5) Question not attempted

37. Which of the following is NOT a major entity operating within the Indian defence and aerospace manufacturing ecosystem?
(1) Bharat Dynamics Limited (BDL)
(2) Hindustan Aeronautics Limited (HAL)
(3) National Mineral Development Corporation (NMDC)
(4) Ordnance Factory Board (now corporatised into DPSUs)
(5) Question not attempted

38. Consider the following statements regarding the renewable energy sector in India:
I. Wind energy manufacturing hubs are prominent in Tamil Nadu and Gujarat.
II. The sector offers massive opportunities for equipment manufacturing like solar PV modules.
III. Rajasthan holds the highest installed solar power capacity in the country.
IV. The renewable sector is moving towards hybrid projects combining solar and wind energy.
V. Coal availability remains the most critical locational factor for new solar parks.
Which combination represents the correct statements?
(1) I, II, III and IV
(2) II, III, IV and V
(3) I, III, IV and V
(4) I, II, IV and V
(5) Question not attempted

39. Identify the incorrect pair regarding the industry and its key locational linkage.
(1) Diamond cutting - Skilled traditional labour
(2) Petrochemicals - Oil refineries / Feedstock
(3) Aluminium smelting - Cheap and abundant electricity
(4) IT Industry - Bulky raw material availability
(5) Question not attempted

40. Arrange the following processes of cement manufacturing in the correct sequential order:
A. Grinding of clinker with gypsum
B. Crushing and proportioning of limestone
C. Heating the raw mix in a rotary kiln to form clinker
D. Packing and dispatch
Select the correct sequence from the options below:
(1) B, C, A, D
(2) B, A, C, D
(3) C, B, A, D
(4) A, C, B, D
(5) Question not attempted

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fruit juices. Based on industrial location theory, where is the most appropriate location for this plant?
(1) Near a major metropolitan city center to ensure immediate access to a massive and diverse consumer market.
(2) Near a major international seaport to facilitate the immediate export of finished products to global markets.
(3) Near fruit-producing hinterlands to minimize spoilage and raw material transport costs.
(4) Near an IT park to leverage technological innovations in marketing.
(5) Question not attempted

14. Which of the following statements regarding India's emerging semiconductor industry is incorrect?
(1) Semiconductor manufacturing requires highly advanced cleanroom facilities and massive capital investment.
(2) The Government of India has launched the comprehensive India Semiconductor Mission to build a robust domestic ecosystem.
(3) Semiconductor fabrication requires an uninterrupted supply of ultra-pure water and reliable power.
(4) India currently meets its entire domestic demand through indigenous chip fabrication plants.
(5) Question not attempted

15. Match the major pharmaceutical and IT clusters in List I with their respective states in List II.
List I: (Cluster)
A. Hyderabad
B. Ahmedabad
C. Pune
D. Noida
List II: (State)
i. Maharashtra
ii. Uttar Pradesh
iii. Telangana
iv. Gujarat
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-i, C-iv, D-ii
(4) A-i, B-iv, C-iii, D-ii
(5) Question not attempted

16. Hindustan Aeronautics Limited (HAL), a cornerstone of the Indian aerospace industry, is headquartered in which of the following cities?
(1) Hyderabad
(2) Bangalore
(3) Chennai
(4) Kanpur
(5) Question not attempted

17. Identify the correctly matched pair regarding the automobile industry clusters in India.
(1) Gurgaon - Commercial heavy machinery hub
(2) Pune - Dominant two-wheeler and passenger vehicle hub
(3) Chennai - Known exclusively for electric battery manufacturing
(4) Jamshedpur - Tractor and agricultural implements solely
(5) Question not attempted

18. Consider the following statements regarding India's IT exports and their economic significance:
I. IT exports constitute a major share of India's total services exports.
II. North America and Europe are the largest destination markets for Indian IT exports.
III. The IT sector has been a primary driver in creating direct and indirect employment in urban India.
IV. IT exports significantly help in bridging India's merchandise trade deficit by contributing to forex reserves.
V. The IT sector operates entirely independently of government policies and SEZ benefits.
Which combination represents the correct statements?
(1) I, II, III and IV
(2) I, II, IV and V
(3) II, III, IV and V
(4) I, III, IV and V
(5) Question not attempted

19. The cement industry relies on several bulky raw materials. Which of the following is NOT a raw material typically required for manufacturing Portland cement?
(1) Limestone
(2) Gypsum
(3) Bauxite

is incorrect?
(1) I only
(2) II only
(3) I and III
(4) II and III
(5) Question not attempted

49. Given below are two statements regarding the Food Processing Industry:
Statement I: The development of food processing industries helps in ensuring better remunerative prices for farmers.
Statement II: Food processing solely involves the packaging of raw agricultural produce without extending its shelf life.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.
(5) Question not attempted

50. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): The IT and IT-enabled Services (ITeS) sector plays a pivotal role in India's macroeconomic stability.
Reason (R): The robust IT exports generate substantial foreign exchange earnings, which help finance India's merchandise trade deficit.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

51. The semiconductor fabrication industry is characterized as an "emerging growth" area. Which of the following best describes the fundamental nature of semiconductor manufacturing?
(1) It is considered highly labor-intensive and requires minimal capital investment compared to other manufacturing sectors.
(2) It relies exclusively on locally sourced, low-grade silicon and traditional craftsmanship.
(3) It is capital-intensive, technologically complex, and dependent on global supply chains.
(4) It is an unorganized sector cottage industry expanding into urban slums.
(5) Question not attempted

52. Consider the following statements regarding the Pharmaceutical Industry in India:
I. Hyderabad is recognized as the "Bulk Drug Capital of India."
II. Ahmedabad and the wider Gujarat cluster account for a significant share of India's pharma manufacturing.
III. India's pharmaceutical growth was completely stunted by the enactment of the Patents Act, 1970.
IV. Production Linked Incentive (PLI) schemes have been launched to boost domestic manufacturing of key starting materials.
Which combination represents the correct statements?
(1) I, II and IV
(2) II, III and IV
(3) I, II and III
(4) I, III and IV
(5) Question not attempted

53. Which state is home to the Muppandal wind farm, one of the largest onshore wind energy hubs in India?
(1) Rajasthan
(2) Gujarat
(3) Tamil Nadu
(4) Maharashtra
(5) Question not attempted

54. Which of the following statements about India's defence manufacturing sector is incorrect?
(1) Defence manufacturing is increasingly being opened to active private sector participation under new government norms.
(2) The Ordnance Factory Board remains a government department and has resisted any form of corporatisation.
(3) Defence corridors have been announced in Uttar Pradesh and Tamil Nadu to promote regional manufacturing hubs.
(4) The government frequently updates

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41. Surat's global dominance in the diamond industry is primarily reflected in which specific value-chain activity?
(1) Extraction of rough diamonds from deep underground mines
(2) Designing heavy diamond mining machinery
(3) Cutting and polishing of rough diamonds
(4) Synthesis of artificial industrial diamonds from coal
(5) Question not attempted

42. In the context of the fertiliser industry, India is completely dependent on imports for which of the following primary plant nutrients?
(1) Potassium
(2) Nitrogen
(3) Phosphorus
(4) Calcium
(5) Question not attempted

43. Which of the following statements correctly identifies a structural challenge within India's pharmaceutical industry despite its status as the 'pharmacy of the world'?
(1) India lacks the fundamental ability to manufacture any generic formulations required for global medical supplies.
(2) The pharmaceutical sector is entirely excluded from receiving any form of foreign direct investment from abroad.
(3) There are no domestic clusters capable of producing vaccines.
(4) The industry faces heavy reliance on imported Active Pharmaceutical Ingredients (APIs) from specific countries.
(5) Question not attempted

44. Identify the odd one out among the following products in relation to the primary output of the petrochemical industry.
(1) Polyethylene (Plastics)
(2) Caustic Soda
(3) Synthetic Rubber (Elastomers)
(4) Synthetic Fibres (Nylon/Polyester)
(5) Question not attempted

45. Match the following major automobile manufacturers in List I with their prominent manufacturing centres in List II.
List I: (Manufacturer)
A. Maruti Suzuki
B. Hyundai
C. Tata Motors (Commercial Vehicles)
D. Tata Motors (Nano/Passenger)
List II: (Manufacturing Centre)
i. Sanand
ii. Gurgaon
iii. Sriperumbudur (Chennai)
iv. Pune
(1) A-ii, B-iii, C-iv, D-i
(2) A-iv, B-i, C-ii, D-iii
(3) A-ii, B-i, C-iv, D-iii
(4) A-iii, B-ii, C-i, D-iv
(5) Question not attempted

46. The transition of the petrochemical industry towards coastal locations in India is primarily driven by:
(1) The critical need to safely dispose of toxic chemical effluents into the deep ocean via underwater channels.
(2) The abundance of fresh water available from the sea for cooling towers.
(3) The requirement of high-velocity coastal winds to run the cracking units.
(4) Reliance on imported crude and the ease of exporting finished polymer products.
(5) Question not attempted

47. Which of the following is NOT generally classified as a major automobile manufacturing cluster in India?
(1) Digboi-Naharkatia (Assam)
(2) National Capital Region (Gurgaon-Manesar)
(3) Chakan-Talegaon (Pune)
(4) Oragadam-Sriperumbudur (Chennai)
(5) Question not attempted

48. Consider the following statements regarding the emergence of startup ecosystems in India:
I. Innovation clusters are typically supported by proximity to premier technical institutes and venture capital availability.
II. Tier-2 and Tier-3 cities are showing no participation or growth in the startup ecosystem.
III. Government initiatives like "Startup India" aim to simplify compliance and provide funding support.
Which of the given combinations of statements

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63. Which of the following statements best describes a "Startup Incubator"?
(1) A program helping startups succeed by providing workspace, funding, mentoring, and training.
(2) A large financial institution that only provides high-interest loans to established multinational corporations.
(3) A government tax collection agency targeting emerging IT businesses.
(4) A heavy machinery plant producing components for the aerospace sector.
(5) Question not attempted

64. The push towards renewable energy industry manufacturing hubs primarily focuses on several core technologies. Which of the following is NOT typically classified under modern renewable energy manufacturing?
(1) Photovoltaic (PV) cells
(2) Supercritical pulverized coal boilers
(3) Wind turbine nacelles and blades
(4) Electrolysers for green hydrogen
(5) Question not attempted

65. Match the food processing sub-sectors in List I with their primary raw materials in List II.
List I: (Sub-sector)
A. Dairy Processing
B. Edible Oil Extraction
C. Milling Industry
D. Fruit Processing
List II: (Raw Material)
i. Wheat and Rice
ii. Apples and Mangoes
iii. Milk
iv. Mustard and Groundnut
(1) A-iii, B-iv, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

66. The global diamond industry, including the Surat cluster, is witnessing technological disruption from Lab-Grown Diamonds (LGDs). What is the primary method of producing these synthetic diamonds?
(1) CVD and High Pressure High Temperature (HPHT) processes.
(2) Extracting them from deep sea polymetallic nodules
(3) Purifying rough quartz crystals using acidic solvents
(4) Recompressing glass fragments at sub-zero temperatures
(5) Question not attempted

67. Given below are two statements regarding the electronics and semiconductor sector:
Statement I: The Production Linked Incentive (PLI) scheme for large scale electronics manufacturing targets a reduction in mobile phone imports.
Statement II: The PLI scheme restricts any foreign company from participating in India's electronics manufacturing growth.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.
(5) Question not attempted

68. Consider the following statements regarding the Jamnagar Refinery:
I. It is situated in Gujarat on the coast of the Gulf of Kutch.
II. It possesses the capability to process heavy and high-sulphur crude oil grades into high-value products.
III. It operates solely as a standalone fuel refinery without any petrochemical integration.
Which of the given combinations of statements is correct?
(1) I and III
(2) II and III
(3) I and II
(4) I, II and III
(5) Question not attempted

69. Identify the odd one out among the following cities, which is NOT traditionally known as a dominant hub for the pharmaceutical industry in India.
(1) Hyderabad
(2) Ahmedabad
(3) Jaisalmer

NODIA

18. (1) I, II, III and IV
The Information Technology sector is a cornerstone of the modern Indian economy, providing significant services exports that help balance trade deficits. Key markets in North America and Europe drive demand for these services. Beyond financial contributions, the industry is a massive employer in urban areas. Government support through Special Economic Zones and favorable policies has been instrumental in this.

19. (3) Bauxite
Cement production requires specific bulky raw materials to create the final product. Limestone serves as the primary ingredient, while coal is used as a fuel source for the high-temperature kilns. Gypsum is added during the final grinding stage to control the setting time of the cement. Bauxite is the primary ore for aluminum and is not typically required.

20. (1) Panipat, Mathura, Mumbai, Kochi
Understanding the spatial distribution of industrial infrastructure involves mapping facilities across latitude. Panipat is located in Haryana, followed southward by Mathura in Uttar Pradesh. Continuing south along the western side of the country, Mumbai hosts major refining units in Maharashtra. Finally, Kochi is situated in Kerala, representing one of the southernmost major oil refining centers in the Indian peninsula.

21. (3) Chennai
Chennai has earned the title of the Detroit of India due to its vast concentration of automobile and component manufacturers. The city accounts for a significant portion of the country's automotive exports. Its established supply chain, skilled labor force, and port access have attracted numerous international car makers to set up large-scale assembly plants and research centers in the region.

22. (2) The HVJ gas pipeline enabled the setup of inland fertiliser plants near demand centers.
The distribution of the fertilizer industry was transformed by the development of gas infrastructure. The Hazira-Vijaipur-Jagdishpur pipeline allowed for the transportation of natural gas, a primary feedstock, to inland regions. This enabled the establishment of urea plants closer to the major agricultural consumption zones of North India, reducing the logistical challenges of transporting finished fertilizers from coastal areas.

23. (4) It provides synthetic raw materials that replace natural materials like wood and natural rubber.
Petrochemicals are vital to modern industry because they provide versatile synthetic alternatives to natural resources. By converting petroleum and natural gas into polymers and fibers, this sector produces materials used in everything from construction to clothing. These synthetic products often offer superior durability or specialized properties compared to traditional materials like wood or natural rubber, driving industrial diversification and innovation.

24. (1) Heavy dependence on imported active components and chips.
While India is a major consumer of electronics, it faces a significant structural challenge due to the lack of domestic semiconductor fabrication. Most active components and integrated circuits required for electronics manufacturing are currently imported. Reducing this dependency is a major policy priority, as it impacts trade balances and national technological sovereignty in an increasingly digital and connected global economy.

25. (1) A-iii, B-iv, C-i, D-ii
Industrial locations are determined by the specific requirements of the production process. The cement industry seeks limestone deposits, while food processing requires proximity to perishable crops. Petrochemical plants are typically found near refineries or ports for feedstock access. In contrast, the aerospace industry gravitates toward high-tech research centers and specialized engineering talent to manage its complex manufacturing needs.

26. (3) Statement I is correct and Statement II is incorrect.
The food processing sector serves as an essential link between agriculture and the market, helping to preserve produce and increase farmer income. This industry plays a key role in reducing post-harvest wastage through better

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76. The emergence of strong startup ecosystems and innovation clusters in cities like Bangalore, Pune, and Hyderabad is heavily a result of:
(1) Extremely low urban real estate prices.
(2) Concentration of engineering talent and proximity to research institutions.
(3) Total absence of environmental regulations.
(4) Geographic proximity to large scale heavy metallurgical and mineral-based industries.
(5) Question not attempted

77. Which of the following factors constitutes a negative constraint or challenge rather than an advantage for the food processing industry in India?
(1) Diverse agro-climatic zones allowing varied crop production
(2) Increasing urbanization and changing dietary habits
(3) High levels of post-harvest losses and inadequate cold chain infrastructure
(4) Strategic geographic location for export to Middle-East and Southeast Asia
(5) Question not attempted

78. Consider the following statements regarding the industries present in Rajasthan:
I. Cement Industry
II. Solar Energy Equipment Manufacturing
III. Nitrogenous Fertiliser Industry (e.g., Gadepan, Kota)
IV. Shipbuilding Industry
V. IT and Startup Parks (e.g., Jaipur, Jodhpur)
Which of the following combinations accurately reflects Rajasthan's industrial profile?
(1) I, II, III and V
(2) I, III, IV and V
(3) II, III, IV and V
(4) I, II, III, IV and V
(5) Question not attempted

79. What is the most significant strategic objective behind promoting indigenous defence manufacturing and reducing import dependence?
(1) To achieve strategic autonomy and secure the supply chain against sanctions.
(2) To ensure a complete state monopoly over all forms of commercial aviation and aircraft production.
(3) To completely eliminate the need for any foreign diplomatic relations.
(4) To shift the entire armed forces strictly towards domestic traditional weaponry.
(5) Question not attempted

80. Arrange the following states in descending order based on their generally recognized installed solar power capacity as part of the renewable energy industry growth in India:
A. Rajasthan
B. Gujarat
C. Karnataka
D. Assam
Select the correct sequence from the options below:
(1) A, B, C, D
(2) D, C, B, A
(3) B, A, C, D
(4) A, C, B, D
(5) Question not attempted

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52. (1) I, II and IV
India's pharmaceutical sector is organized into powerful regional clusters, with Hyderabad and Gujarat being major contributors. The 1970 Patents Act actually helped the industry grow by allowing process patents, which fostered generic drug manufacturing. Today, the government uses Production Linked Incentive schemes to encourage the domestic production of critical raw materials, aiming to reduce import dependency and strengthen the supply chain.

53. (3) Tamil Nadu
The Muppandal wind farm is a landmark in India's renewable energy landscape, located in the Kanyakumari district of Tamil Nadu. It is one of the largest onshore wind energy facilities in the world. The site's location near the mountain passes of the Western Ghats ensures a consistent and strong flow of wind, making it an ideal hub for large-scale power generation.

54. (2) The Ordnance Factory Board remains a government department and has resisted any form of corporatisation.
To modernize the defense sector, the Indian government has corporatized the Ordnance Factory Board into several new Defense Public Sector Undertakings. This move is intended to improve operational efficiency and competitiveness. Alongside this, the government actively encourages private sector participation and creates defense corridors in states like Tamil Nadu and Uttar Pradesh to foster a robust, indigenous manufacturing ecosystem and reduce imports.

55. (1) A-i, B-iii, C-ii, D-iv
India's industrial landscape features specialized hubs for various emerging sectors. Surat is the global center for diamond cutting, while Bangalore is the heart of the aerospace and IT industries, supported by organizations like HAL and ISRO. Renewable energy manufacturing focuses on producing high-tech components such as solar PV modules and wind turbines, which are essential for the country's transition toward sustainability.

56. (1) Establishment of HAL and proximity to the Indian Institute of Science (IISc).
Bangalore's status as an aerospace leader was established decades ago through the strategic placement of key institutions. The founding of Hindustan Aeronautics Limited provided a manufacturing core, while the Indian Institute of Science offered advanced research and a steady stream of engineers. This synergy between industrial production and academic research created a specialized ecosystem that continues to drive aerospace innovation in the country.

57. (3) Iron Ore
The production of chemical fertilizers depends on specific hydrocarbon-based feedstocks to provide hydrogen and energy. Natural gas, naphtha, and fuel oil are commonly used in various plants across India to manufacture urea and other nitrogenous products. Iron ore, however, is a metallic mineral used primarily in the steel industry and has no role as a feedstock for chemical fertilizer production.

58. (2) I, II, III and IV
The petrochemical industry transforms petroleum derivatives into a wide variety of essential products. This includes polymers for plastics, synthetic fibers for textiles, and elastomers used in rubber manufacturing. It also produces surfactants used in detergents. However, Portland cement clinker is a mineral-based product made primarily from limestone and is unrelated to the hydrocarbon processing that defines the petrochemical manufacturing sector.

59. (4) Kochi Refinery - Bharat Petroleum Corporation Limited (BPCL)
India's oil refining sector includes several major public and private players. The Kochi refinery is a significant facility operated by Bharat Petroleum Corporation Limited. In contrast, the Panipat and Mathura refineries are managed by the Indian Oil Corporation, while the Jamnagar complex is a private enterprise owned by Reliance Industries. These refineries are critical for meeting the country's diverse fuel requirements.

60. (1) Noida, Pune, Hyderabad, Chennai
Mapping India's major technology centers from north to south provides a clear picture

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Hyderabad, Pune, and Noida are major centers for software development and IT-enabled services. In contrast, Dhanbad is primarily recognized as a mining and industrial town centered on coal production rather than the high-technology service-oriented economy of IT hubs.

10. (1) Both A and R are true and R is the correct explanation of A.
Surat has become a global center for diamond processing despite lacking local mines. This growth is driven by historical expertise in craftsmanship and strong local entrepreneurial networks. Furthermore, proximity to Mumbai's international port facilities facilitates the seamless import of rough stones and the export of finished gems. These logistical and human capital factors combined to establish its dominance.

11. (4) Defence Research and Development Organisation (DRDO)
Enhancing national security requires dedicated scientific research and technological advancement. The Defence Research and Development Organisation functions as the primary body for designing and developing sophisticated military hardware. It works across various domains, including aeronautics, armaments, and electronics. Its efforts are central to achieving self-reliance in defense by providing indigenous technological solutions to the Indian armed forces.

12. (2) I, III and IV
India's renewable energy sector is expanding rapidly, with Rajasthan leading in solar capacity due to favorable geographical conditions. National missions provide a policy framework to attract investments and foster innovation. While wind energy is concentrated in coastal states with high wind speeds, the entire sector benefits from diverse participation ranging from large global corporations to emerging domestic startups.

13. (3) Near fruit-producing hinterlands to minimize spoilage and raw material transport costs.
Food processing units involving perishable items like fruits are ideally situated near the source of raw materials. This strategic placement reduces the risk of spoilage during transit and lowers overall transportation costs for heavy agricultural produce. By locating plants close to orchards, firms ensure a fresher supply of inputs, which is essential for maintaining product quality in manufacturing.

14. (4) India currently meets its entire domestic demand through indigenous chip fabrication plants.
Semiconductor manufacturing is a complex, high-technology field requiring immense capital and specialized environments. While the Indian government has launched initiatives to build a domestic ecosystem, the country still relies heavily on imports for its chip requirements. Establishing full-scale indigenous fabrication plants is a long-term goal that requires overcoming significant technological hurdles and securing vast amounts of ultra-pure resources.

15. (1) A-iii, B-iv, C-i, D-ii
Industrial clusters are often defined by their regional specializations and state-level policy support. Hyderabad in Telangana is a major pharmaceutical and IT hub, while Ahmedabad in Gujarat excels in chemicals and drugs. Pune represents Maharashtra's strengths in automotive and software sectors. Noida serves as a critical technology and manufacturing gateway for the National Capital Region in Uttar Pradesh.

16. (2) Bangalore
Bangalore serves as the headquarters for India's premier aerospace company, Hindustan Aeronautics Limited. The city's evolution into an aviation hub began with the establishment of this organization, which manufactures and maintains various military aircraft. This corporate presence has fostered a wider ecosystem of research labs and ancillary industries, making the city the heart of India's strategic aerospace manufacturing sector.

17. (2) Pune - Dominant two-wheeler and passenger vehicle hub
India's automobile industry is organized into distinct geographic clusters. Pune is widely recognized as a major center for the production of two-wheelers and passenger cars, hosting numerous global and domestic manufacturers. While other regions like Chennai and Gurgaon also have massive automotive footprints, Pune's integrated ecosystem of component suppliers and assembly lines makes it a dominant force.

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ANSWERS

1. (2) Natural gas and naphtha
Petrochemical industries rely on hydrocarbons derived from crude oil and natural gas. Naphtha, a liquid byproduct of oil refining, and natural gas are the primary feedstocks used to produce basic chemicals like ethylene and propylene. These chemicals serve as building blocks for synthetic fibres, plastics, and various elastomers used across global manufacturing sectors and consumer markets.

2. (1) Reliance Industries Limited (RIL)
The Jamnagar refinery complex is a private sector enterprise located in Gujarat. It stands as the largest oil refinery in the world, featuring advanced processing capabilities. This facility plays a pivotal role in India's energy security and export revenue, operating with a high complexity index that allows it to process diverse grades of heavy and sour crude oil.

3. (3) They are port-based refineries established to easily process imported crude oil.
Geographical positioning plays a crucial role in industrial efficiency. Coastal cities like Mumbai and Kochi provide strategic access to maritime trade routes. These refineries are specifically designed to handle and process large volumes of imported crude oil arriving via sea. This location minimizes domestic transportation costs for raw materials while facilitating the efficient export of finished petroleum products.

4. (4) Natural gas pipelines
The production of nitrogenous fertilizers, particularly urea, requires a steady supply of hydrogen, which is predominantly sourced from natural gas. The development of extensive pipeline networks, such as the Hazira-Vijaipur-Jagdishpur line, has allowed these plants to move away from coastal feedstock sources and establish operations closer to inland agricultural demand centers across North India and other regions.

5. (1) A-iii, B-iv, C-i, D-ii
Major oil refineries are strategically distributed across India to ensure regional fuel availability. The Mathura facility serves the northern region from Uttar Pradesh, while Kochi caters to the southern market in Kerala. Panipat is a major hub in Haryana, and the Mumbai refineries are central to Maharashtra's industrial landscape. These facilities are essential for national energy distribution.

6. (2) Mass production of generic drugs and vaccines
India has established global leadership in the pharmaceutical sector through its ability to manufacture high-quality generic medicines at affordable prices. This industrial strength is supported by a large pool of skilled scientists and cost-effective manufacturing processes. Consequently, the nation supplies a significant portion of the world's vaccines and essential medications, particularly to several developing and developed countries.

7. (4) Establishment of public sector heavy industries and prestigious research institutions.
Bangalore's emergence as a technological hub was catalyzed by the presence of premier scientific organizations like the Indian Institute of Science. Historically, the city hosted several significant public sector undertakings in aerospace and electronics. This established a robust ecosystem of engineering talent and research capabilities, which later attracted global software giants and fostered a thriving modern startup environment.

8. (3) I and II
The cement industry is characterized by the use of bulky, weight-losing raw materials like limestone. This necessitates the location of plants near mineral deposits to ensure economic viability. States like Rajasthan, Madhya Pradesh, and Andhra Pradesh dominate production due to their vast limestone reserves. Energy availability, including coal and electricity, remains a critical factor for successful industrial operations.

9. (3) Dhanbad
India's Information Technology landscape is concentrated in specific urban clusters known for their digital infrastructure and skilled workforce.

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storage and processing. However, Mega Food Parks are infrastructure projects designed to provide modern processing facilities and supply chain support, rather than being sites for seed production.

27. (4) Tripura
Large-scale cement production is concentrated in states with extensive limestone deposits and industrial infrastructure. Rajasthan, Madhya Pradesh, and Andhra Pradesh are leaders in the Indian cement sector due to their favorable geology. Tripura, located in Northeast India, lacks the massive mineral reserves and large-scale industrial plants required to match the manufacturing capacity of the major cement-producing states in the mainland.

28. (2) I and III
India's defense sector is undergoing significant transformation through increased private participation and foreign investment. Ordnance factories traditionally provided essential hardware, and their corporatization aims to enhance efficiency. The government promotes indigenization to reduce imports. In contrast, the Defence Research and Development Organisation focuses on military technology rather than commercial civilian aircraft, which falls under the purview of other specialized entities.

29. (3) $1 Billion
In the global startup ecosystem, a "Unicorn" is a term used to describe a privately held startup company that has reached a valuation of one billion US dollars or more. This milestone indicates significant investor confidence and market potential. India has seen a rapid rise in the number of such companies across various sectors like fintech, e-commerce, and software.

30. (1) Both A and R are true and R is the correct explanation of A.
The growth of pharmaceutical hubs in Hyderabad and Ahmedabad is rooted in historical legal frameworks that favored process innovation. By allowing the reverse engineering of medicines, Indian firms were able to produce affordable generic versions of global drugs. This, combined with a strong base of chemical engineering expertise, allowed these clusters to become global leaders in the export of pharmaceuticals.

31. (1) A geographic concentration of interconnected businesses and associated institutions in a specific field.
An innovation cluster is a localized ecosystem where companies, research institutions, and service providers in a specific industry collaborate and compete. These clusters benefit from shared resources, a specialized labor pool, and the rapid exchange of ideas. Examples include technology hubs where startups and established firms coexist, driving regional economic growth and technological advancement through collective proximity and shared knowledge.

32. (1) I, II and III
The Indian automobile industry is anchored by several major clusters that have grown around specific manufacturers. The Gurgaon-Manesar region was pioneered by Maruti Suzuki, while Chennai became a hub for Hyundai and others. Pune remains a vital center for Tata Motors and passenger vehicle production. Contrary to the idea of coastal confinement, these inland clusters thrive due to strong demand.

33. (2) Chittorgarh-Nimbahera belt
Rajasthan is a premier state for cement manufacturing due to its abundant mineral wealth. The Chittorgarh-Nimbahera region is particularly prominent because it contains high-grade limestone deposits necessary for large-scale production. This concentration of raw materials has led to the establishment of numerous cement plants in this specific belt, making it a critical industrial zone for the construction sector in North India.

34. (1) It is entirely owned and operated by the Government of India via a public sector undertaking.
The Jamnagar refinery is a flagship project of the private sector, specifically owned by Reliance Industries Limited. It is world-renowned for its immense scale and high Nelson Complexity Index, which enables it to refine low-quality crude into high-value fuels. The facility is fully integrated with petrochemical production and features its own dedicated marine infrastructure to handle massive global trade volumes.

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35. (1) A-iv, B-iii, C-i, D-ii
IT hubs in India are strategically located across different geographical zones. Noida is a key part of the National Capital Region in the north. Chennai is situated along the Coromandel Coast in the south. Pune represents the industrial strength of Western India near Mumbai. Hyderabad, located on the Deccan Plateau, serves as a major technology center for the southern part of the country.

36. (4) Presence of vast high-quality limestone deposits within the Vindhyan ranges.
Industrial development in Madhya Pradesh is heavily influenced by its geological characteristics. The state possesses extensive limestone reserves, particularly within the Vindhyan mountain range. Since limestone is the primary raw material for cement and is very bulky to transport, plants are established directly in these mineral-rich areas. This proximity ensures cost-effective production and supports the state's position as a leading producer.

37. (3) National Mineral Development Corporation (NMDC)
The Indian defense and aerospace sector comprises specialized manufacturing and research organizations. Entities like Bharat Dynamics and Hindustan Aeronautics are directly involved in producing military hardware and aircraft. In contrast, the National Mineral Development Corporation is a public sector undertaking focused on the extraction of minerals like iron ore, which serves as a raw material for broader metallurgical industries rather than defense specifically.

38. (1) I, II, III and IV
India's renewable energy landscape is diversifying, with Tamil Nadu and Gujarat leading in wind energy and Rajasthan topping solar capacity. The sector is characterized by a shift toward hybrid projects and domestic manufacturing of components like PV modules. Importantly, the location of these projects is determined by natural resource availability, such as sunlight and wind, rather than traditional factors like coal.

39. (4) IT Industry - Bulky raw material availability
The Information Technology industry is categorized as a footloose industry because it does not depend on bulky physical raw materials. Instead, its primary requirements are high-speed digital connectivity and a skilled human workforce. Other industries like petrochemicals and aluminum smelting are tightly linked to specific raw materials or energy sources, whereas IT can be established in any location with talent.

40. (1) B, C, A, D
Cement manufacturing follows a specific industrial sequence. First, limestone is crushed and proportioned to create a raw mix. This mixture is then heated in a rotary kiln to produce clinker through chemical reactions. The clinker is subsequently ground with gypsum to regulate its setting properties. Finally, the finished cement is packed and dispatched to markets for use in various construction projects.

41. (3) Cutting and polishing of rough diamonds
Surat's role in the global diamond industry is specialized in the mid-stream processing phase. The city does not have diamond mines; instead, it imports rough stones from around the world. Skilled artisans in Surat perform the precise tasks of cutting and polishing these stones, transforming them into high-value gems. This specific expertise has made Surat a dominant hub for finished diamonds.

42. (1) Potassium
India has significant production capacity for nitrogenous fertilizers and some phosphatic ones, but it lacks domestic reserves of potash. Consequently, the country is almost entirely dependent on imports to meet its requirement for potassic fertilizers. This dependency makes the agricultural sector sensitive to global price fluctuations and supply chain disruptions in international mineral markets for this essential plant nutrient.

43. (4) The industry faces heavy reliance on imported Active Pharmaceutical Ingredients (APIs) from specific countries.
Despite its global reputation for generic manufacturing, the Indian pharmaceutical industry has a significant vulnerability. It relies heavily on imports for Active Pharmaceutical Ingredients, which are the basic chemical components needed to produce drugs. This dependence, particularly on a few specific

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countries, poses a risk to supply chain security. Addressing this through domestic manufacturing is now a major strategic national priority.

44. (2) Caustic Soda
Petrochemical industries produce a wide range of materials derived from hydrocarbons, including plastics like polyethylene, synthetic fibers like nylon, and various elastomers. These products are essentially organic chemicals. In contrast, caustic soda is an inorganic chemical typically produced through the electrolysis of brine. While used in many industrial processes, it is not a direct product of the petroleum-based refining chain.

45. (1) A-ii, B-iii, C-iv, D-i
Different automobile companies have established their primary manufacturing bases in specific regional clusters. Maruti Suzuki is synonymous with the Gurgaon industrial area, while Hyundai's main Indian operations are centered in Sriperumbudur near Chennai. Tata Motors has long-standing commercial vehicle production in Pune and established a passenger vehicle plant in Sanand to manufacture smaller cars. These locations provide vital logistics.

46. (4) Reliance on imported crude and the ease of exporting finished polymer products.
The modern petrochemical industry in India is increasingly locating near the coast to optimize logistics. Since a large portion of crude oil feedstock is imported via sea, coastal plants reduce internal transport costs. Additionally, being near major ports facilitates the efficient export of finished products like polymers and synthetic fibers to international markets, enhancing the global competitiveness of the entire industry.

47. (1) Digboi-Naharkatia (Assam)
Major automobile clusters in India are located in regions like the National Capital Region, the Pune-Mumbai belt, and the Chennai area, where there is a high concentration of assembly plants and component suppliers. Digboi and Naharkatia in Assam are historic centers for the oil and gas industry, home to some of India's oldest oil fields and refineries, rather than automotive.

48. (2) II only
India's startup ecosystem is characterized by a broadening geographic reach. While major cities initially dominated, there is now significant participation from Tier-2 and Tier-3 cities. This growth is supported by government initiatives like Startup India and the availability of talent near technical institutions. Innovation is no longer confined to the largest metros, as improved digital infrastructure enables entrepreneurship across various regions.

49. (3) Statement I is correct and Statement II is incorrect.
The food processing industry is vital for enhancing the value of agricultural produce. It helps farmers by providing a stable market and better prices for their crops. Beyond mere packaging, food processing involves transforming raw materials into value-added products and using preservation techniques to significantly extend shelf life. This reduces waste and ensures that food remains safe for consumption over longer periods.

50. (1) Both A and R are true and R is the correct explanation of A.
The Information Technology sector is a pillar of the Indian economy, contributing significantly to macroeconomic stability. By exporting high-value software services, the industry earns substantial foreign exchange. These earnings are crucial for offsetting the trade deficit caused by the import of physical goods like oil and electronics. Thus, the sector's performance directly supports the national balance of payments and economic resilience.

51. (3) It is capital-intensive, technologically complex, and dependent on global supply chains.
Semiconductor fabrication is one of the most advanced forms of modern manufacturing. It requires massive financial investments to build specialized facilities with ultra-clean environments. The process is technologically intricate, involving precision engineering at the microscopic level. Furthermore, it depends on a highly integrated global supply chain for specialized materials and equipment, making it a high-stakes sector for national technological advancement.

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(4) Baddi
(5) Question not attempted

70. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Cement manufacturing plants are overwhelmingly located in close proximity to limestone mining areas.
Reason (R): Limestone is a bulky and weight-losing raw material, making it economically unviable to transport over long distances before processing.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

71. In the context of the petrochemical industry, what does the process of "cracking" refer to?
(1) The physical process of breaking down solid raw coal into fine powdered dust for industrial boilers.
(2) The method used to polish synthetic diamonds.
(3) The degradation of old concrete structures to recycle cement.
(4) Breaking down complex hydrocarbon molecules into simpler ones like ethylene and propylene.
(5) Question not attempted

72. Consider the following statements regarding the distribution of the fertiliser industry:
I. Proximity to raw materials is the sole determinant for the location of fertiliser plants.
II. Natural gas-based urea plants are largely distributed along the cross-country gas pipelines.
III. Port locations are favoured for plants dependent on imported rock phosphate and potash.
IV. The industry requires intensive capital investment and stable power supply.
Which combination of statements is correct?
(1) I, II and III
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

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73. Which major defence and aerospace establishment, located primarily in Bangalore, acts as India's principal designer and manufacturer of combat aircraft, helicopters, and avionics?
(1) Bharat Heavy Electricals Limited (BHEL)
(2) Garden Reach Shipbuilders & Engineers (GRSE)
(3) Hindustan Aeronautics Limited (HAL)
(4) Mazagon Dock Shipbuilders Limited (MDL)
(5) Question not attempted

74. Which of the following statements regarding India's automobile industry clusters is incorrect?
(1) The automobile industry has shown no interest or transition towards manufacturing Electric Vehicles (EVs).
(2) The Pune cluster benefits from proximity to the Mumbai port and a strong ancillary component base.
(3) The Gurgaon-Manesar cluster developed initially around the establishment of Maruti Udyog Limited.
(4) The Chennai cluster encompasses a wide ecosystem including passenger cars, commercial vehicles, and automotive IT engineering.
(5) Question not attempted

75. Match the following industrial clusters in List I with their associated states in List II.
List I: (Industrial Cluster)
A. Gurgaon automobile cluster
B. Sriperumbudur electronics and auto hub
C. Chakan industrial area
D. Pithampur auto cluster
List II: (State)
i. Madhya Pradesh
ii. Haryana
iii. Maharashtra
iv. Tamil Nadu
(1) A-ii, B-iv, C-iii, D-i
(2) A-iv, B-ii, C-i, D-iii
(3) A-i, B-iii, C-iv, D-ii
(4) A-ii, B-i, C-iii, D-iv
(5) Question not attempted

of the country's digital geography. Noida is the northernmost hub in the National Capital Region. Moving south, Pune represents the western technological cluster in Maharashtra. Further south on the Deccan Plateau lies Hyderabad, while Chennai is located on the southeastern coast, completing the sequence of major technology hubs.

61. (3) Cement industry
The Katni-Satna-Rewa belt in Madhya Pradesh is famously associated with a massive concentration of cement manufacturing. This industrial development is driven by the region's vast and high-quality limestone deposits. Because limestone is too bulky to transport over long distances, numerous large-scale plants have been built directly over these mineral reserves, making the belt a cornerstone of India's construction material production.

62. (4) IT Services and Software Development
While India's technology sector is broad, the majority of its revenue and export earnings come from IT services and software development. This includes activities like application management, system integration, and software maintenance for global clients. Although hardware and semiconductors are growing areas, they do not yet match the scale and international market dominance achieved by India's software service and business process companies.

63. (1) A program helping startups succeed by providing workspace, funding, mentoring, and training.
A startup incubator is a specialized organization designed to support the development of new businesses during their early stages. By providing essential resources like office space, seed funding, and expert mentorship, incubators help entrepreneurs overcome initial challenges. These programs are often associated with universities or government initiatives and play a vital role in fostering innovation and growth within regional ecosystems.

64. (2) Supercritical pulverized coal boilers
Modern renewable energy manufacturing focuses on technologies that harness natural, replenishable sources like the sun, wind, and hydrogen. This includes producing solar cells, wind turbine parts, and electrolysers. Supercritical pulverized coal boilers are advanced components used in traditional thermal power plants to improve the efficiency of burning fossil fuels. While they are a cleaner form of power, they are not renewable.

65. (1) A-iii, B-iv, C-i, D-ii
Food processing involves converting various agricultural inputs into consumer products. Dairy processing centers on milk, while edible oil extraction uses oilseeds like mustard and groundnut. The milling industry transforms grains like wheat and rice into flour. Fruit processing utilizes horticultural produce like apples and mangoes to create juices. These linkages are essential for reducing waste and adding value to agriculture.

66. (1) CVD and High Pressure High Temperature (HPHT) processes.
Technological advancements have allowed for the creation of diamonds in laboratory settings using methods that replicate natural geological conditions. The Chemical Vapor Deposition and High Pressure High Temperature processes are the two primary techniques used. These methods produce diamonds with the same properties as mined stones, offering a sustainable and disruptive alternative for the jewelry and industrial diamond sectors globally.

67. (3) Statement I is correct and Statement II is incorrect.
The Production Linked Incentive scheme is a strategic policy designed to boost India's manufacturing capabilities in sectors like electronics. It aims to increase domestic production and reduce the reliance on imports for devices like mobile phones. Crucially, the scheme is open to both domestic and international companies, encouraging global manufacturers to set up large-scale production bases in India for global markets.

68. (3) I and II
The Jamnagar refinery is a state-of-the-art facility located on the coast of Gujarat. Its strategic location allows for the efficient processing of imported heavy and high-sulphur crude oil grades. Far from being a standalone plant, it is deeply integrated with a massive petrochemical

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(5) Question not attempted

32. Consider the following statements regarding the Eastern Plains of Rajasthan:
I. They constitute about 23.3 percent of the total area of the state.
II. They support the highest population density among all physiographic divisions in Rajasthan.
III. They are characterized by a complete absence of alluvial soil.
Which of the above statements is/are incorrect?
(1) I only
(2) II only
(3) III only
(4) I and III only
(5) Question not attempted

33. In the context of the physiographic divisions of Rajasthan, what does the term "Marusthali" literally translate to, describing its harsh environmental conditions?
(1) The Land of the Kings
(2) The Region of Death
(3) The Region of Sand
(4) The Land of Winds
(5) Question not attempted

34. The catchment area of the Kantli river, a prominent seasonal river of the Shekhawati region, is locally known by what name?
(1) Torawati
(2) Godwar
(3) Thali
(4) Magra
(5) Question not attempted

35. Match the major soil types in List I with the corresponding physiographic regions of Rajasthan in List II.
List I: (Soil Type)
A. Arid and Sandy Soils (Anti-sols)
B. Medium Black Soils (Vertisols)
C. Red-Yellow Soils (Alfisol/Inceptisol mix)
D. Alluvial Soils (Alfisols)
List II: (Physiographic Region)
i. Eastern Plains
ii. Southern Aravalli Foothills
iii. Hadoti Plateau
iv. Western Sandy Plains
Select the correct code:
(1) A-iv, B-ii, C-iii, D-i
(2) A-i, B-iii, C-ii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-iv, B-iii, C-i, D-ii
(5) Question not attempted

36. Which of the following defines the spatial dimensions of Rajasthan?
(1) Its North-South span is larger than its East-West span.
(2) Both North-South and East-West spans are exactly equal.
(3) Its East-West span is twice its North-South span.
(4) Its East-West span is larger than its North-South span.
(5) Question not attempted

37. The overall geographical shape of Rajasthan is most accurately described by which of the following geometric figures?
(1) A perfect square
(2) An equilateral triangle
(3) A rhombus or irregular quadrilateral
(4) A pentagon
(5) Question not attempted

38. Consider the following statements concerning the administrative geography of Rajasthan:
I. Rajasthan is divided into 10 administrative divisions.
II. Jodhpur division covers the largest geographical area among all divisions.
III. Banswara, Pali, and Sikar were recently established as new divisions.
IV. The total number of districts in Rajasthan has always remained fixed at 33 since its formation.
Which of the above statements is/are correct?
(1) I, II and IV only
(2) I, II and III only
(3) II, III and IV only
(4) I and IV only
(5) Question not attempted

39. Which of the following districts of Rajasthan does NOT share its border with the state of Gujarat?
(1) Barmer
(2) Jalore
(3) Sirohi

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77. (3) High levels of post-harvest losses and inadequate cold chain infrastructure.
Despite being a leading producer of many crops, India's food processing sector faces significant hurdles. A major challenge is the lack of a robust cold chain network, which leads to high levels of spoilage between the farm and the factory. These post-harvest losses reduce the availability of quality raw materials and increase costs, hindering the industry's ability to reach its potential.

78. (1) I, II, III and V
Rajasthan has a diverse industrial profile that leverages its natural resources and modern policy initiatives. It is a leader in cement production and solar energy equipment manufacturing. The state also hosts significant nitrogenous fertilizer plants and is developing a vibrant IT and startup ecosystem in its major cities. However, being landlocked, it does not possess a shipbuilding industry, which is coastal.

79. (1) To achieve strategic autonomy and secure the supply chain against sanctions.
Promoting domestic defense manufacturing is a strategic necessity for national security. By reducing reliance on foreign imports, India aims to achieve strategic autonomy, ensuring that the armed forces can operate effectively regardless of international geopolitical shifts or potential sanctions. A secure, indigenous supply chain for military hardware is essential for maintaining a credible defense posture and protecting the nation's long-term interests.

80. (1) A, B, C, D
India's solar energy landscape is dominated by states with high solar radiation and vast available land. Rajasthan currently leads in installed capacity, followed by Gujarat and Karnataka, which have also made significant investments in large-scale solar parks. Assam, located in a region with different climatic conditions and terrain, has a much lower installed solar capacity compared to these leading states.

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complex. This integration allows the refinery to produce a wide range of high-value fuels and chemical products.

69. (3) Jaisalmer
India's pharmaceutical industry is concentrated in urban centers with established industrial bases and research facilities. Hyderabad and Ahmedabad are leading hubs, while Baddi in Himachal Pradesh has emerged as a major manufacturing center due to policy incentives. Jaisalmer, however, is a desert city in Rajasthan known for its heritage and renewable energy potential, but it lacks the pharmaceutical manufacturing ecosystem.

70. (1) Both A and R are true and R is the correct explanation of A.
The location of cement plants is primarily dictated by the availability of limestone. Since limestone is a bulky and weight-losing material, transporting it over long distances significantly increases production costs. Therefore, to ensure economic efficiency, manufacturing facilities are situated as close as possible to the mining sites. This minimizes logistical expenses and allows for the competitive production of this essential material.

71. (4) Breaking down complex hydrocarbon molecules into simpler ones like ethylene and propylene.
In the petrochemical industry, cracking is a fundamental chemical process used to refine petroleum. It involves breaking large, complex hydrocarbon chains found in crude oil or natural gas into smaller, more valuable molecules. These simpler molecules, such as ethylene and propylene, are the essential building blocks for manufacturing various plastics, synthetic fibers, and other chemical products used in modern economies.

72. (2) II, III and IV
While raw materials are important, the distribution of the fertilizer industry is also influenced by infrastructure and energy. The use of natural gas pipelines has allowed urea plants to be established inland near demand centers. Port locations remain vital for processing imported minerals like rock phosphate and potash. The industry's high capital requirements and stable power needs also dictate where plants are located.

73. (3) Hindustan Aeronautics Limited (HAL)
Hindustan Aeronautics Limited is the primary organization responsible for India's military aviation needs. Based largely in Bangalore, it designs and manufactures a wide range of combat aircraft, helicopters, and electronic flight systems. As a central pillar of the defense manufacturing ecosystem, it plays a vital role in achieving national self-reliance by providing the Indian armed forces with domestically produced platforms.

74. (1) The automobile industry has shown no interest or transition towards manufacturing Electric Vehicles (EVs).
India's automobile industry is undergoing a major shift toward electric mobility, with established clusters in Pune and Chennai actively developing EV manufacturing capabilities. These regions leverage their existing supply chains and research expertise to produce electric cars and two-wheelers. The Gurgaon-Manesar area also remains a force. The industry is rapidly adapting to global trends toward cleaner and more sustainable transportation technologies.

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75. (1) A-ii, B-iv, C-iii, D-i
Industrial development in India is concentrated in specific regional clusters. Gurgaon is the premier automotive hub of Haryana. Sriperumbudur serves as a critical center for electronics and automobiles in Tamil Nadu. Chakan is a major industrial zone in Maharashtra, particularly for passenger vehicles. Pithampur is recognized as a significant auto hub in Madhya Pradesh due to its concentration of manufacturing units.

76. (2) Concentration of engineering talent and proximity to research institutions.
The growth of innovation clusters in cities like Bangalore and Hyderabad is driven by the density of intellectual capital. These cities host numerous prestigious engineering colleges and research laboratories, providing a constant supply of skilled graduates. This environment fosters the exchange of ideas and provides the technical expertise necessary for high-tech startups. Proximity to established firms and venture capital further accelerates development.

8. The following question consists of two statements, an Assertion (A) and a Reason (R). Read the statements carefully and select the correct answer.
Assertion (A): The western part of Rajasthan remains largely arid with highly deficient rainfall.
Reason (R): The Aravalli Range lies parallel to the direction of the Arabian Sea branch of the southwest monsoon, failing to act as an effective barrier to cause precipitation.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. In which district and at what elevation is Guru Shikhar, the highest peak of Rajasthan, situated?
(1) Udaipur, 1722 metres
(2) Rajsamand, 1597 metres
(3) Sirohi, 1722 metres
(4) Sirohi, 1597 metres
(5) Question not attempted

10. Which of the following options represents the correct descending sequence of the highest mountain peaks of the Aravalli Range based on their elevation?
(1) Guru Shikhar, Ser, Dilwara, Jarga
(2) Guru Shikhar, Dilwara, Ser, Jarga
(3) Guru Shikhar, Jarga, Ser, Dilwara
(4) Guru Shikhar, Ser, Jarga, Dilwara
(5) Question not attempted

11. The Eastern Plains of Rajasthan are primarily formed by the depositional activities of which major river system?
(1) Luni and its tributaries
(2) Ghaggar and Kantli
(3) Sabarmati and West Banas
(4) Banas, Mahi, and Chambal
(5) Question not attempted

12. Consider the following statements regarding the Hadoti Plateau:
I. It is an extension of the Malwa Plateau in Rajasthan.
II. It is characterized primarily by the presence of rich alluvial soils.
III. It contains geological formations of both the Vindhyan and Deccan trap systems.
Which of the above statements is/are correct?
(1) I only
(2) I and III only
(3) II and III only
(4) I, II and III
(5) Question not attempted

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13. The Shekhawati region is largely defined by its distinct physiographic conditions. Which of the following best describes the hydrological characteristic of this region?
(1) Perennial rivers flowing consistently into the Yamuna basin.
(2) Estuarine systems connecting the state to the Rann of Kutch.
(3) Inland drainage where rivers terminate before reaching the sea.
(4) Glacial-fed hydrological basins typical of high mountain ranges.
(5) Question not attempted

14. The Mewat region of Rajasthan is known for its transitional physiographic characteristics. This region predominantly encompasses parts of which modern-day districts?
(1) Jodhpur and Bikaner
(2) Udaipur and Dungarpur
(3) Kota and Baran
(4) Alwar and Bharatpur
(5) Question not attempted

15. Match the geological formations in List I with their corresponding primary region or feature in List II.
List I: (Geological Formation)
A. Banded Gneissic Complex
B. Lathi Series
C. Vindhyan Supergroup
D. Pleistocene Alluvium
List II: (Region/Feature)
i. Eastern Plains
ii. Southeastern Plateau (Hadoti)
iii. Aravalli Base
iv. Jaisalmer Region
Select the correct code:
(1) A-iii, B-iv, C-ii, D-i
(2) A-i, B-ii, C-iv, D-iii
(3) A-iii, B-ii, C-iv, D-i

(5) Question not attempted

48. The following question consists of two statements, an Assertion (A) and a Reason (R). Read the statements carefully and select the correct answer.
Assertion (A): The Hadoti Plateau region is highly suitable for the cultivation of commercial crops like cotton and soybean.
Reason (R): The soil of this region is medium black, formed from the weathering of basaltic lava rocks, which has high moisture retention capacity.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

49. In the context of the physiographic adaptation in the semi-arid Shekhawati region, what is the term used for the traditional earthen structures constructed to capture and conserve rainwater?
(1) Bawari
(2) Johad
(3) Khadin
(4) Tanka
(5) Question not attempted

50. The hills located in the Mewat region, which form an integral part of the northern Aravallis and influence the transitional micro-climate of the area, are generally known as:
(1) Alwar Hills
(2) Malkhet Hills
(3) Harsha Hills
(4) Chappan Hills
(5) Question not attempted

51. What is the defining geographical feature of the Lathi Series region in Jaisalmer?
(1) A prominent series of limestone caves.
(2) A continuous stretch of shifting barchan sand dunes.
(3) An underground water-bearing geological aquifer strip.
(4) A highly elevated plateau formed by tectonic upliftment.
(5) Question not attempted

52. Consider the following statements regarding the geographical extent of Rajasthan:
I. It became the largest state of India in terms of area after the bifurcation of Madhya Pradesh in the year 2000.
II. It shares a continuous border with five Indian states and one foreign country.
III. The area of Rajasthan is roughly equivalent to the area of the United Kingdom and slightly smaller than Germany.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

53. Geologically, the rocks of the Aravalli Mountain Range are primarily classified into two main supergroups. What are they?
(1) Vindhyan Supergroup and Marwar Supergroup
(2) Malani Igneous Suite and Lathi Series
(3) Bhilwara Supergroup and Delhi Supergroup
(4) Deccan Traps and Gondwana Supergroup
(5) Question not attempted

54. The Akal Wood Fossil Park, which provides concrete evidence of the geological history and paleoclimate of Rajasthan, belongs primarily to which geological period?
(1) Precambrian Period
(2) Carboniferous Period
(3) Jurassic Period
(4) Pleistocene Epoch
(5) Question not attempted

55. Match the mountain passes (Nals) of the Aravalli in List I with their respective locations or connecting routes in List II.
List I: (Pass/Nal)
A. Desuri Nal
B. Hathiguda Ki Nal
C. Goram Ghat
D. Someshwar Nal
List II: (Location/Route)
i. Connects Rajsamand and Pali
ii. Near Kumbhalgarh
iii. Forms part of the railway route in Rajsamand
iv. Near the boundary of Pali and Udaipur
Select the correct code:

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(4) Luni
(5) Question not attempted

24. The floodplains of the Ghaggar river, situated in the districts of Sriganganagar and Hanumangarh, are locally known by which of the following terms?
(1) Nali
(2) Roohi
(3) Magra
(4) Bhabar
(5) Question not attempted

25. Match the local physiographic terms in List I with their corresponding descriptions or locations in List II.
List I: (Local Term)
A. Bhorat
B. Girwa
C. Uparmal
D. Khadar
List II: (Description/Location)
i. Saucer-shaped valley surrounding Udaipur
ii. Plateau region between Kumbhalgarh and Gogunda
iii. Plateau extending from Bijolia to Bhainsrorgarh
iv. New alluvial soils found in river plains
Select the correct code:
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-iii, C-i, D-iv
(3) A-ii, B-i, C-iii, D-iv
(4) A-iii, B-i, C-ii, D-iv
(5) Question not attempted

26. "Chappan Ka Maidan" is a deeply dissected plain region famous for its undulating topography. In which river basin is it located?
(1) Mahi Basin
(2) Luni Basin
(3) Banas Basin
(4) Sabarmati Basin
(5) Question not attempted

27. The Great Boundary Fault is a significant geological feature in Rajasthan. It primarily separates the Aravalli Range from which other structural formation?
(1) The Tethys sedimentary sequences
(2) The Marwar Supergroup
(3) The Banded Gneissic Complex
(4) The Vindhyan Supergroup
(5) Question not attempted

28. The following question consists of two statements, an Assertion (A) and a Reason (R). Read the statements carefully and select the correct answer.
Assertion (A): The Aravalli Mountain Range is recognized as the Great Indian Water Divide in Rajasthan.
Reason (R): It separates the drainage system that flows into the Bay of Bengal from the drainage system that flows into the Arabian Sea.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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29. During which geological era were the Aravalli mountains primarily formed?
(1) Mesozoic Era
(2) Paleozoic Era
(3) Precambrian Era
(4) Cenozoic Era
(5) Question not attempted

30. Consider the following structural and geological regions found in Rajasthan:
I. Banded Gneissic Complex
II. Lathi Series
III. Vindhyan Supergroup
IV. Sand Dunes of Marusthali
Which of the following represents the correct chronological sequence from the oldest to the youngest?
(1) I, III, II, IV
(2) I, II, III, IV
(3) III, I, II, IV
(4) III, I, IV, II
(5) Question not attempted

31. The Vindhyan Scarplands in southeastern Rajasthan are predominantly composed of which types of rocks?
(1) Sandstone and Limestone
(2) Basalt and Gabbro
(3) Granite and Rhyolite
(4) Marble and Quartzite

(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

16. The geological and physiographic structure of Rajasthan heavily dictates its economic strengths. The region dominating the production of non-ferrous minerals is:
(1) The Western Sandy Plains
(2) The Aravalli Mountain Range
(3) The Eastern Plains
(4) The Ghaggar Basin
(5) Question not attempted

17. Based on the longitudinal extent of Rajasthan, what is the approximate time difference between the easternmost point (Silana village, Dholpur) and the westernmost point (Katra village, Jaisalmer)?
(1) 22 minutes
(2) 28 minutes
(3) 36 minutes
(4) 45 minutes
(5) Question not attempted

18. Consider the following statements regarding the geographical extent of Rajasthan:
I. The north-to-south maximum distance of the state is 826 km.
II. The east-to-west maximum distance of the state is 869 km.
III. The shape of Rajasthan is generally described as a regular hexagon.
IV. The Tropic of Cancer passes through the northernmost districts of the state.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I, II and IV only
(4) I and IV only
(5) Question not attempted

19. The Tropic of Cancer (23.5° N) passes through which physiographic and administrative zone of Rajasthan?
(1) Northern plains covering Sriganganagar and Hanumangarh districts.
(2) Central Aravalli range crossing through Ajmer and Rajsamand.
(3) Southern tip traversing Dungarpur and Banswara districts.
(4) Easternmost border areas along Dholpur and Bharatpur districts.
(5) Question not attempted

20. Shifting sand dunes, locally known as Dharian, are a predominant feature of western Rajasthan. What is the primary environmental effect of these migrating dunes on the regional economy?
(1) They form temporary lakes used to boost winter agricultural yields.
(2) They increase the mineral content of topsoil for specific cash crops.
(3) They reduce the impact of diurnal temperature variation in the desert.
(4) They cause desertification by encroaching upon fertile agricultural lands.
(5) Question not attempted

21. Which specific type of sand dune is crescent-shaped, characterized by a steep leeward slope and a gentle windward slope, and is widely responsible for the expansion of the desert in Rajasthan?
(1) Seif dunes
(2) Parabolic dunes
(3) Barchan dunes
(4) Transverse dunes
(5) Question not attempted

22. Consider the following statements regarding the Aravalli Range:
I. It is one of the oldest fold mountain systems in the world.
II. It extends from southwest to northeast across Rajasthan.
III. It acts as a major water divide in the state.
IV. Its elevation and width progressively increase from south-west to north-east.
V. It is primarily composed of quartzite, gneiss, and schist rocks.
Which of the above statements is/are incorrect?
(1) III only
(2) IV only
(3) II and IV only
(4) I and V only
(5) Question not attempted

23. The Godwar tract is associated with the basin of which of the following rivers?
(1) Banas
(2) Mahi
(3) Chambal

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(4) Pratapgarh
(5) Question not attempted

40. Identify the district of Rajasthan that forms an interstate boundary with both Haryana and Uttar Pradesh.
(1) Deeg
(2) Alwar
(3) Dholpur
(4) Sawai Madhopur
(5) Question not attempted

41. If a traveler journeys directly from Jaipur to Jodhpur, what sequential transition of macro-physiographic regions will they predominantly observe?
(1) Eastern Plains → Aravalli Range → Western Sandy Plains
(2) Aravalli Range → Hadoti Plateau → Eastern Plains
(3) Western Sandy Plains → Aravalli Range → Eastern Plains
(4) Hadoti Plateau → Eastern Plains → Aravalli Range
(5) Question not attempted

42. Consider the following statements regarding the Thar Desert (Western Sandy Plains) of Rajasthan:
I. It occupies roughly 61.11% of the state's total area.
II. It is characterized by internal drainage systems and ephemeral rivers.
III. It supports a significantly higher population density compared to other deserts of the world.
IV. It contains vast expanses of rocky desert locally called 'Hamada'.
V. It receives an average annual rainfall exceeding 60 cm uniformly.
Which of the above statements is/are incorrect?
(1) II only
(2) V only
(3) I and III only
(4) IV and V only
(5) Question not attempted

43. Which of the following is considered the highest peak of the Central Aravalli region?
(1) Raghunathgarh
(2) Taragarh
(3) Achalgarh
(4) Todgarh (Goramji)
(5) Question not attempted

44. What is the name of the highest mountain peak in the Northern Aravalli region, and in which district is it located?
(1) Babai, Jhunjhunu
(2) Raghunathgarh, Sikar
(3) Khoh, Jaipur
(4) Bhairach, Alwar
(5) Question not attempted

45. Match the mountain peaks of the Aravalli Range in List I with their respective districts in List II.
List I: (Peak)
A. Achalgarh
B. Jarga
C. Raghunathgarh
D. Taragarh
List II: (District)
i. Ajmer
ii. Sirohi
iii. Sikar
iv. Udaipur
Select the correct code:
(1) A-ii, B-i, C-iii, D-iv
(2) A-iv, B-ii, C-i, D-iii
(3) A-ii, B-iv, C-iii, D-i
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

46. The Piedmont Plain, characterized by a sloping terrain at the foot of the Aravalli hills, is locally prominent in the Banas basin near which location?
(1) Bikaner
(2) Jhalawar
(3) Pokhran
(4) Devgarh (Rajsamand)
(5) Question not attempted

47. The Mahi basin in southern Rajasthan features deep ravines and a rugged, heavily forested topography. What is the local regional term used to describe this specific area covering Dungarpur and Banswara?
(1) Vagad
(2) Maru
(3) Meru
(4) Bhabar

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CHAPTER 17
Location, Extent and Physiography

1. Which of the following options accurately represents the geographical extension of Rajasthan in terms of latitude and longitude?
(1) 23°3'N to 30°12'N latitude and 69°30'E to 78°17'E longitude
(2) 24°3'N to 31°12'N latitude and 68°30'E to 77°17'E longitude
(3) 23°3'N to 30°12'N latitude and 68°30'E to 77°17'E longitude
(4) 22°3'N to 29°12'N latitude and 69°30'E to 78°17'E longitude
(5) Question not attempted

2. The total geographical area of Rajasthan is 3,42,239 square kilometres. What percentage of the total geographical area of India does Rajasthan represent?
(1) 9.87 percent
(2) 10.41 percent
(3) 11.21 percent
(4) 12.35 percent
(5) Question not attempted

3. Identify the incorrect statement regarding the international boundary of Rajasthan.
(1) The international boundary is known as the Radcliffe Line.
(2) The total length of the international boundary is exactly 1070 km.
(3) Bikaner district shares the longest segment of the international boundary among all bordering districts.
(4) The boundary begins at Hindumalkot in the north and ends at Shahgarh (Balkhasar) in the south.
(5) Question not attempted

4. Rajasthan shares its interstate boundaries with five Indian states. Which of the following pairs correctly identifies the states with the longest and shortest boundary lengths with Rajasthan respectively?
(1) Gujarat and Haryana
(2) Madhya Pradesh and Uttar Pradesh
(3) Uttar Pradesh and Punjab
(4) Madhya Pradesh and Punjab
(5) Question not attempted

5. Match the adjoining states in List I with the length of their respective boundary shared with Rajasthan in List II.
List I: (State)
A. Madhya Pradesh
B. Haryana
C. Gujarat
D. Punjab
List II: (Boundary Length)
i. 1262 km
ii. 1022 km
iii. 1600 km
iv. 89 km
Select the correct code:
(1) A-iii, B-ii, C-i, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-i, C-ii, D-iv
(4) A-ii, B-i, C-iii, D-iv
(5) Question not attempted

6. Which of the following is not recognized as one of the four major macro-physiographic divisions of Rajasthan?
(1) Western Sandy Plains
(2) Southern Coastal Plains
(3) Aravalli Range and Hilly Region
(4) Southeastern Rajasthan Plateau
(5) Question not attempted

7. According to geological evidence, the Thar Desert of Rajasthan is considered to be the remnant of which ancient geographical feature?
(1) Gondwanaland
(2) Angaraland
(3) Panthalassa Ocean
(4) Tethys Sea
(5) Question not attempted

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(1) A-i, B-iii, C-ii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-iv, B-ii, C-iii, D-i
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

56. Which of the following districts is the odd one out as it does NOT share a boundary with the international border (Radcliffe Line)?
(1) Jodhpur
(2) Jaisalmer
(3) Bikaner
(4) Phalodi
(5) Question not attempted

57. Which district of Rajasthan shares both an international boundary with Pakistan and an interstate boundary with Gujarat?
(1) Sriganganagar
(2) Jalore
(3) Barmer
(4) Jaisalmer
(5) Question not attempted

58. Consider the following statements regarding the Eastern Plains of Rajasthan:
I. The region is largely composed of older alluvium (Bangar) and newer alluvium (Khadar).
II. The Banas plain is situated in the northern part of this macro-region.
III. The Chambal basin is famous for its heavily gullied topography.
IV. The Eastern Plains receive the lowest average annual rainfall among all physiographic regions of Rajasthan.
Which of the above statements is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) I, II and IV only
(5) Question not attempted

59. The Utkhat (Badland) topography is an extensive geomorphological feature resulting from severe water erosion. This physiographic feature is the hallmark of which river basin?
(1) Luni Basin
(2) Mahi Basin
(3) Sabarmati Basin
(4) Chambal Basin
(5) Question not attempted

60. Which of the following options represents the correct sequence of states that form the interstate boundary of Rajasthan when traced from North moving clockwise towards the South-West?
(1) Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Gujarat
(2) Punjab, Uttar Pradesh, Haryana, Madhya Pradesh, Gujarat
(3) Haryana, Punjab, Uttar Pradesh, Gujarat, Madhya Pradesh
(4) Punjab, Haryana, Madhya Pradesh, Uttar Pradesh, Gujarat
(5) Question not attempted

61. Based on the relationship between area and population in Rajasthan's physiographic divisions, which region is characterized by the highest population density?
(1) Western Sandy Plains
(2) Aravalli Range and Hilly Region
(3) Eastern Plains
(4) Southeastern Rajasthan Plateau
(5) Question not attempted

62. Consider the following statements about Rajasthan's interstate boundaries:
I. Rajasthan shares its longest interstate border with Madhya Pradesh.
II. The border with Punjab is the shortest, measuring 89 km.
III. Bhilwara is the district that shares the longest interstate boundary overall.
IV. Jhalawar shares an interstate boundary with Madhya Pradesh.
V. Two districts of Rajasthan share a boundary with Uttar Pradesh.
Which of the above statements is/are correct?
(1) I, II and IV only
(2) I, II, IV and V only
(3) II, III and V only
(4) I, II, III, IV and V
(5) Question not attempted

63. The physiographic feature known as the "Mewar Rock" or the dominant Aravalli structural base in the southern districts forms the core of which administrative division?
(1) Udaipur Division
(2) Bikaner Division

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region and marks the contact zone between these two distinct mountain systems.

28. (1) Both A and R are true and R is the correct explanation of A.
The Aravalli Range is recognized as the Great Indian Water Divide in Rajasthan because it effectively splits the state's drainage. Rivers originating on the western slopes, like the Luni, flow toward the Arabian Sea. Conversely, rivers on the eastern slopes, such as the Banas and Chambal, eventually drain into the Bay of Bengal, illustrating the range's critical hydrological role.

29. (3) Precambrian Era
The Aravalli mountains were formed during the Precambrian Era, making them one of the oldest fold mountain systems in the world. Over billions of years, they have undergone extensive erosion, transforming into the relict or residual mountains seen today. Their ancient geological origin is responsible for the diverse and rich mineral deposits found within their complex metamorphic rock structures.

30. (1) I, III, II, IV
Rajasthan's geological timeline starts with the Banded Gneissic Complex, the oldest basement rock. This was followed by the deposition of the Vindhyan Supergroup in the southeast. Later, the Mesozoic Lathi Series formed in the western region. The most recent additions are the Quaternary sand dunes of the Marusthali, which continue to be shaped by wind action in the present era.

31. (1) Sandstone and Limestone
The Vindhyan Scarplands in southeastern Rajasthan are primarily composed of thick layers of sandstone and limestone. These sedimentary rocks are highly valued for construction and industrial purposes. The scarps form prominent cliffs and plateaus, characterizing the landscape of districts like Dholpur, Karauli, and Bundi. These formations represent a significant chapter in the state's geological history and economic resource base.

32. (3) III only
The Eastern Plains cover about 23.3 percent of Rajasthan and support the state's highest population density. These plains are actually characterized by rich alluvial soil deposited by the Banas and Chambal river systems, making them highly suitable for agriculture. Therefore, claiming there is a complete absence of alluvial soil is incorrect, as it is the region's defining physical and geological feature.

33. (2) The Region of Death
The term "Marusthali" is derived from Sanskrit, where "Maru" means desert and "Sthali" means land. It literally translates to the "Region of Death," reflecting the harsh, arid conditions and the extreme difficulty of sustaining life in the core desert area. This name emphasizes the historical challenges faced by inhabitants due to acute water scarcity and the unforgiving desert climate.

34. (1) Torawati
The catchment area of the Kantli River, which flows through the Shekhawati region, is locally known as Torawati. This area predominantly covers parts of Sikar and Jhunjhunu districts. The name is historically linked to the Tanwar Rajput clan that once ruled this territory. It remains a significant geographical and cultural identifier within the semi-arid landscape of northern Rajasthan's internal drainage system.

35. (3) A-iv, B-iii, C-ii, D-i
Rajasthan's soil distribution is closely linked to its physiography. Arid sandy soils are found in the Western Plains, while the Hadoti Plateau features fertile medium black soils. The foothills of the southern Aravallis are characterized by red-yellow soils. Alluvial soils dominate the Eastern Plains, having been deposited by major rivers, which supports the intensive agricultural activity found in that region.

36. (4) Its East-West span is larger than its North-South span.
Rajasthan's geography is characterized by its wide horizontal extent compared to its vertical length. The east-to-west distance of the state is 869 kilometers, while the north-to-south span is slightly shorter at 826 kilometers. This difference of 43 kilometers indicates that the state has a broader latitudinal spread, which influences its varied climate and the specific time of sunrise and sunset.

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71. The mineral economy of Rajasthan is closely tied to its physiography. While the Aravalli range provides metallic minerals, the Hadoti plateau is primarily famous for the extensive extraction of which resource?
(1) Lignite coal and natural petroleum reserves.
(2) Precious gemstones like high-quality emeralds.
(3) Radioactive minerals like unrefined uranium.
(4) Building stones like sandstone and limestone.
(5) Question not attempted

72. Consider the following statements regarding Guru Shikhar:
I. It is located in the Mount Abu region of the Sirohi district.
II. Col. James Tod referred to it as the 'Peak of the Saints' (Santon Ka Shikhar).
III. It lies in the northern section of the Aravalli Range.
Which of the above statements is/are correct?
(1) I only
(2) I and II only
(3) II and III only
(4) I, II and III
(5) Question not attempted

73. In the context of the Thar Desert classification, the region surrounding Jaisalmer, Ramgarh, and Pokhran that consists predominantly of exposed sedimentary rocks without significant sand cover is known as:
(1) Erg
(2) Reg
(3) Hamada
(4) Playa
(5) Question not attempted

74. Which of the following statements best provides the definition of a "Reg" in the geographical context of Rajasthan?
(1) A desert plain consisting of gravel, pebbles, and sand.
(2) A sandy terrain dominated by various shifting dunes.
(3) A temporary water body formed between longitudinal dunes.
(4) A some escarpment found at the edge of a high plateau.
(5) Question not attempted

75. Match the major macro-physiographic divisions in List I with their approximate percentage share of Rajasthan's total geographical area in List II.
List I: (Division)
A. Western Sandy Plains
B. Aravalli Range
C. Eastern Plains
D. Southeastern Plateau
List II: (Percentage Area)
i. 9.0%
ii. 23.3%
iii. 6.89%
iv. 61.11%
Select the correct code:
(1) A-iv, B-ii, C-i, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iv, C-ii, D-iii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

76. In the Eastern Plains of Rajasthan, areas comprised of older alluvium that are generally elevated above the flood levels of rivers are technically termed as:
(1) Khadar
(2) Bangar
(3) Rohi
(4) Bhabar
(5) Question not attempted

77. The physiography of Rajasthan has a profound impact on its climate. Which of the following represents the most significant climatic function of the Aravalli Range?
(1) It channels cold Siberian winds directly into the heart of the Thar Desert.
(2) It entirely blocks the Bay of Bengal monsoon branch from entering the state.
(3) It acts as a divide restricting the eastward spread of the desert.
(4) It generates localized cyclonic disturbances during the cold winter season.
(5) Question not attempted

78. Consider the following statements regarding the Mewat physiographic region:
I. It serves as a transitional zone between the arid west and the humid Gangetic plains.
II. The Sahibi and Ruparel rivers are significant

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(3) Jodhpur Division
(4) Bharatpur Division
(5) Question not attempted

64. What does the geological term "Bap Boulder Bed" located near Jodhpur signify in the context of Rajasthan's geological history?
(1) Evidence of volcanic eruptions in the Cenozoic era.
(2) Evidence of extensive glaciation during the Permo-Carboniferous period.
(3) Evidence of a marine transgression during the Jurassic period.
(4) Evidence of wind erosion during the Quaternary period.
(5) Question not attempted

65. Match the geographical terms associated with the desert morphology in List I with their specific definitions in List II.
List I: (Term)
A. Hamada
B. Reg
C. Erg
D. Runn/Tat
List II: (Definition)
i. A sandy desert
ii. A rocky, stone-paved desert lacking sand
iii. A mixed desert of stones and sand
iv. A shallow saline depression or temporary lake
Select the correct code:
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-iii, C-i, D-iv
(3) A-ii, B-i, C-iii, D-iv
(4) A-iii, B-ii, C-i, D-iv
(5) Question not attempted

66. Out of the total 692 kilometers length of the Aravalli Range from Palanpur (Gujarat) to Delhi, approximately what length lies within the borders of Rajasthan?
(1) 450 km
(2) 500 km
(3) 550 km
(4) 600 km
(5) Question not attempted

67. The Southeastern Plateau (Hadoti region) is structurally divided into two major sub-units. Which of the following correctly identifies these two sub-units?
(1) Malwa Plateau and Bundelkhand Gneiss
(2) Bhorat Plateau and Lasiya Plateau
(3) Vindhyan Scarplands and Deccan Lava Plateau
(4) Mewar Rocky Region and Chappan Plains
(5) Question not attempted

68. The following question consists of two statements, an Assertion (A) and a Reason (R). Read the statements carefully and select the correct answer.
Assertion (A): The Western Sandy Plains of Rajasthan experience a very high diurnal range of temperature.
Reason (R): The sandy soil of the region is characterized by a high specific heat capacity, meaning it absorbs and loses heat extremely slowly.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

69. Nakki Lake, a prominent high-altitude geological feature of Rajasthan, is situated within which specific physiographic formation?
(1) The Bhorat Plateau
(2) The Vindhyan Scarplands
(3) The Mount Abu Batholith (Aravalli Range)
(4) The Uparmal Plateau
(5) Question not attempted

70. Consider the following broad categories of geological formations found in Rajasthan:
I. Quaternary Aeolian Deposits (Sand Dunes)
II. Aravalli Supergroup
III. Deccan Traps
IV. Vindhyan Supergroup
Which of the following represents the correct chronological order from youngest (most recent) to oldest?
(1) I, III, IV, II
(2) II, IV, III, I
(3) I, IV, III, II
(4) II, III, IV, I
(5) Question not attempted

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ANSWERS

1. (1) 23°3'N to 30°12'N latitude and 69°30'E to 78°17'E longitude
Rajasthan lies in the north-western part of India, extending from 23°3' to 30°12' north latitude and 69°30' to 78°17' east longitude. This latitudinal stretch covers about 826 kilometers from north to south. The longitudinal expanse spans 869 kilometers from east to west, marking the state's vast horizontal layout within the Indian subcontinent and defining its spatial coordinates.

2. (2) 10.41 percent
Rajasthan is the largest state in India by land area, covering 3,42,239 square kilometers. This vast territory accounts for approximately 10.41 percent of the total geographical area of the nation. Since the formation of Chhattisgarh from Madhya Pradesh in 2000, Rajasthan has maintained its status as the top-ranking state regarding physical size across the entire country.

3. (3) Bikaner district shares the longest segment of the international boundary among all bordering districts.
The international border between Rajasthan and Pakistan, known as the Radcliffe Line, spans 1070 kilometers. Jaisalmer district shares the longest portion of this boundary, covering 464 kilometers. In contrast, Phalodi shares the shortest segment. The line starts at Hindumalkot in Sriganganagar and concludes at Shahgarh in the Barmer district, ensuring vital national security for the region.

4. (4) Madhya Pradesh and Punjab
Rajasthan borders five Indian states, sharing varying boundary lengths. The longest interstate border is shared with Madhya Pradesh, spanning 1600 kilometers to the southeast. Conversely, the shortest boundary is with Punjab in the north, covering only 89 kilometers. These borders play a crucial role in the state's economic trade, cultural exchange, and overall administrative regional connectivity with its neighboring territories.

5. (3) A-iii, B-i, C-ii, D-iv
The interstate boundaries of Rajasthan vary significantly in length across different directions. Madhya Pradesh shares the most extensive border at 1600 kilometers. Haryana follows with 1262 kilometers, while Gujarat covers 1022 kilometers. Punjab shares the smallest boundary at 89 kilometers. These measurements define the state's geopolitical limits and influence the shared regional resources and various interstate migratory and trade patterns.

6. (2) Southern Coastal Plains
Rajasthan is divided into four major physiographic units: the Western Sandy Plains, the Aravalli Range and Hilly Region, the Eastern Plains, and the Southeastern Rajasthan Plateau. Being a landlocked state, it does not possess any coastal features or plains. These diverse regions are categorized based on their distinct geological structures, relief features, soil types, and the prevailing regional climatic conditions.

7. (4) Tethys Sea
Geologically, the Thar Desert is considered a remnant of the ancient Tethys Sea. The presence of marine fossils and saline lakes throughout the western region provides evidence of this prehistoric oceanic existence. Over millions of years, tectonic movements and climatic shifts transformed the seabed into the vast arid plains and sandy terrains observed in western Rajasthan in the present era.

8. (1) Both A and R are true and R is the correct explanation of A.
The western part of Rajasthan is arid primarily because the Aravalli Range is aligned parallel to the direction of the Arabian Sea branch of the southwest monsoon. Consequently, the moisture-laden winds pass through the region without being forced to rise and cool. This lack of an effective physical barrier results in extremely low, erratic, and highly deficient precipitation patterns.

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hydrological features of this area.
III. It is culturally and geographically confined entirely to the Bharatpur district.
IV. It features isolated hillocks belonging to the Northern Aravalli system.

Which of the above statements is/are correct?
(1) I, II and IV only
(2) I, II and III only
(3) II, III and IV only
(4) I and IV only
(5) Question not attempted

79. Which district of Rajasthan shares the longest continuous interstate boundary with another state?
(1) Jhalawar
(2) Barmer
(3) Chittorgarh
(4) Hanumangarh
(5) Question not attempted

80. Consider the following statements regarding the overall geological history and physiography of Rajasthan:
I. The Aravalli mountains are considered relict or residual mountains of the Precambrian era.
II. The Thar Desert is widely accepted as a geological extension of the Peninsular Block.
III. The Eastern Plains are composed of recent Quaternary alluvial deposits.
IV. The Hadoti Plateau was formed by basic extrusive igneous rocks during the volcanic activity of the Cretaceous-Eocene period.
V. The Great Boundary Fault physically separates the Thar Desert from the Aravalli Range.

Which of the above statements are correct?
(1) I, II, III and IV only
(2) I, III and IV only
(3) II, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

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kilometers and an east-to-west width of 869 kilometers. Its shape is generally described as a rhombus or irregular quadrilateral, not a regular hexagon. Additionally, the Tropic of Cancer passes through the southernmost districts, Dungarpur and Banswara, rather than the northernmost parts of the state's vast territory.

19. (3) Southern tip traversing Dungarpur and Banswara districts.
The Tropic of Cancer traverses the southern extremity of Rajasthan. It passes through the districts of Banswara and Dungarpur, with Banswara being the city closest to this line. This positioning influences the local climate, leading to higher solar radiation and distinct seasonal variations in the southern parts of the state compared to the northern plains and the central Aravalli range.

20. (4) They cause desertification by encroaching upon fertile agricultural lands.
Shifting sand dunes, known locally as Dharian, are a major environmental concern in western Rajasthan. These migrating dunes move due to strong winds, often encroaching upon fertile agricultural lands and human settlements. This process leads to desertification, reducing the area available for farming and impacting the regional economy by destroying crops and disrupting the natural ecological balance of the desert landscape.

21. (3) Barchan dunes
Barchan dunes are crescent-shaped formations common in the Thar Desert. They are characterized by a gentle slope on the windward side and a steep slope on the leeward side. These dunes are highly mobile and are primarily responsible for the expansion of desert conditions in Rajasthan, as they shift across the landscape in the direction of the prevailing seasonal winds.

22. (2) IV only
The Aravalli Range is an ancient fold mountain system that acts as a major water divide. While it extends from southwest to northeast, its elevation and width actually decrease as one moves toward the northeast. The highest and widest parts are located in the southwest, particularly in Sirohi and Udaipur, before tapering down significantly toward Jaipur and the Delhi region.

23. (4) Luni
The Godwar tract refers to the region in southwestern Rajasthan associated with the Luni River basin. It predominantly covers parts of the Pali and Jalore districts. This area is characterized by the drainage system of the Luni and its various tributaries. The region has a distinct cultural and geographical identity within the larger semi-arid landscape of the western sandy plains.

24. (1) Nali
The floodplains created by the seasonal Ghaggar River in the northern districts of Sriganganagar and Hanumangarh are locally called Nali. This region is known for its fertile soil, which supports intensive agriculture, particularly wheat and rice cultivation, when water is available. The term reflects the narrow, channel-like nature of the river's path as it flows through these northern plains.

25. (3) A-ii, B-i, C-iii, D-iv
Local terminology describes various unique landforms in Rajasthan. The Bhorat plateau lies between Kumbhalgarh and Gogunda, while Girwa refers to the saucer-shaped hills around Udaipur. Uparmal is the plateau extending from Bijolia to Bhainsrorgarh. Lastly, Khadar denotes the new alluvial soil found in river floodplains. Understanding these terms is essential for identifying the state's micro-physiographical regions and their characteristics.

26. (1) Mahi Basin
Chappan Ka Maidan is an undulating plain located in the Mahi River basin of southern Rajasthan, specifically between Banswara and Pratapgarh. It is named after the fifty-six villages or river streams that once characterized this fertile but deeply dissected landscape. The region is known for its rugged topography, red soil, and significance in the local agricultural economy of the south.

27. (4) The Vindhyan Supergroup
The Great Boundary Fault is a major tectonic feature in Rajasthan that runs through the southeastern districts like Bundi and Sawai Madhopur. It serves as the geological dividing line between the ancient Aravalli Range and the younger Vindhyan Supergroup. This fault line highlights the complex tectonic history of the

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9. (3) Sirohi, 1722 metres
Guru Shikhar is the highest point in Rajasthan and the entire Aravalli Range, standing at an elevation of 1722 meters above sea level. It is located in the Mount Abu region within the Sirohi district. This peak is an important landmark for both geographers and tourists, offering a panoramic view of the surrounding rugged mountain landscape and historical sites.

10. (1) Guru Shikhar, Ser, Dilwara, Jarga
The highest peaks of the Aravalli Range are predominantly located in the southern section. Guru Shikhar leads at 1722 meters, followed by Ser at 1597 meters and Dilwara at 1442 meters, all situated in Sirohi. Jarga, located in Udaipur, stands at 1431 meters. This descending order highlights the significant elevation of the southern Aravallis compared to the central and northern regions.

11. (4) Banas, Mahi, and Chambal
The Eastern Plains of Rajasthan are fertile regions formed by the extensive depositional work of major river systems. The Banas, Mahi, and Chambal rivers, along with their numerous tributaries, have deposited rich alluvium over centuries. These plains are characterized by high agricultural productivity and support a large population, making them the most densely inhabited physiographic division in the entire state.

12. (2) I and III only
The Hadoti Plateau represents the edge of the Malwa Plateau in Rajasthan. Geologically, it is composed of both the Vindhyan Supergroup and the Deccan Trap basaltic lava systems. While it features black soil derived from volcanic rocks, it is not primarily characterized by alluvial deposits. This region is known for its distinct rugged terrain, rich biodiversity, and extensive sandstone quarries.

13. (3) Inland drainage where rivers terminate before reaching the sea.
The Shekhawati region is distinguished by its internal or inland drainage system. In this semi-arid area, rivers like the Kantli do not reach the sea or join larger river systems like the Yamuna. Instead, they flow for short distances and eventually disappear into the sandy terrain or local depressions, reflecting the region's unique hydrological constraints and typical semi-arid climatic conditions.

14. (4) Alwar and Bharatpur
The Mewat region is a transitional zone located in the northeastern part of Rajasthan. It primarily encompasses the modern-day districts of Alwar and Bharatpur. Geographically, it bridges the gap between the Aravalli hills and the fertile Indo-Gangetic plains. The area is characterized by isolated hills and a mix of agricultural plains, reflecting its unique position and transitional micro-climate within the state.

15. (1) A-iii, B-iv, C-ii, D-i
Rajasthan's geology is diverse, with formations spanning billions of years. The Banded Gneissic Complex forms the Aravalli base, while the Lathi Series is a crucial groundwater-bearing strip in Jaisalmer. The Vindhyan Supergroup dominates the southeastern Hadoti region. Finally, the Pleistocene Alluvium is responsible for the fertile soil of the Eastern Plains, supporting the state's intensive agricultural activities and large settlements.

16. (2) The Aravalli Mountain Range
The Aravalli Mountain Range is the primary source of metallic and non-ferrous minerals in Rajasthan. It contains significant deposits of lead, zinc, silver, copper, and manganese. The complex geological history and ancient rock formations of this range provide a rich mineral base that supports various industries, contributing substantially to the state's economy and its status as a leading mineral-rich region.

17. (3) 36 minutes
Rajasthan's longitudinal extent spans approximately 8 degrees and 47 minutes. Since the earth rotates one degree every four minutes, the time difference between the easternmost point in Dholpur and the westernmost point in Jaisalmer is roughly 35 to 36 minutes. Consequently, the sun rises and sets significantly earlier in the eastern districts compared to the far western desert villages of the state.

18. (1) I and II only
Rajasthan possesses a distinct geographical footprint with a north-to-south distance of 826

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37. (3) A rhombus or irregular quadrilateral
The overall geographical shape of Rajasthan is most accurately described as a rhombus or an irregular quadrilateral. Some geographers also refer to it as "kite-shaped" or rhomboid. This distinct outline is formed by its various state and international boundaries, extending more in the horizontal direction than the vertical, and defines the state's unique and recognizable appearance on the map.

38. (2) I, II and III only
Rajasthan is currently divided into 10 administrative divisions, with Jodhpur being the largest in terms of area. Recently, Banswara, Pali, and Sikar were established as new divisions to improve governance. However, the number of districts has increased significantly from the previous count of 33, reflecting administrative restructuring to manage the state's growing population and its vast and diverse geographical territory.

39. (4) Pratapgarh
Rajasthan shares its southwestern border with Gujarat. The districts involved in this interstate boundary include Barmer, Jalore, Sirohi, Udaipur, Dungarpur, and Banswara. Pratapgarh, however, is located further east and shares its border exclusively with Madhya Pradesh. It does not touch the Gujarat state line, making it the exception among the listed districts in the southern part of the state.

40. (1) Deeg
Deeg is a newly formed district that shares its interstate boundaries with both Haryana and Uttar Pradesh. Previously, Bharatpur held this distinction, but after administrative reorganization, Deeg now occupies the specific geographical position bordering these two neighboring states. This unique location makes it a vital transit point and a region of significant cultural and economic interaction between the three neighboring states.

41. (1) Eastern Plains → Aravalli Range → Western Sandy Plains
Traveling from Jaipur to Jodhpur involves crossing several distinct physiographic zones. Jaipur is situated in the Eastern Plains. As one moves west, they must traverse the central Aravalli Range, which acts as a major physical barrier. Finally, the journey concludes in Jodhpur, which lies on the edge of the Western Sandy Plains, marking the transition into the arid desert landscape.

42. (2) V only
The Thar Desert covers over 61 percent of Rajasthan and is known for its high population density relative to other global deserts. It features internal drainage and rocky "Hamada" sections. However, it is incorrect to state that it receives uniform rainfall exceeding 60 cm. In reality, most of the region receives less than 25 to 50 cm of annual precipitation.

43. (4) Todgarh (Goramji)
The highest peak in the Central Aravalli region is Todgarh, also known as Goramji, which stands at an elevation of approximately 934 meters. Located in the Ajmer district, it represents the most prominent point of this middle section of the range. Taragarh is another significant peak in this area, but it is lower in height compared to the Todgarh peak.

44. (2) Raghunathgarh, Sikar
Raghunathgarh is the highest mountain peak in the Northern Aravalli region, reaching an elevation of 1055 meters. It is situated in the Sikar district. This peak stands out in the northern landscape where the Aravallis are generally lower and more fragmented. It serves as an important geographical marker for the region's topography and its relationship with the surrounding northern plains.

45. (3) A-ii, B-iv, C-iii, D-i
Mountain peaks in the Aravallis are distributed across various districts, defining local relief. Achalgarh is a significant peak in Sirohi, while Jarga is the highest in Udaipur. Raghunathgarh is the most prominent elevation in Sikar for the northern section. Taragarh is the famous hilltop fortification in Ajmer. These peaks highlight the varying heights of the range from south to north.

46. (4) Devgarh (Rajsamand)
The Piedmont Plain in Rajasthan is a characteristic sloping landform located at the foot of the Aravalli hills. It is particularly prominent in the Banas River basin near Devgarh in the Rajsamand district. This region features

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a transition from hilly terrain to flatter plains, created by the accumulation of eroded materials, and is an important sub-division of the Eastern Plains.

47. (1) Vagad
The rugged, deeply dissected, and forested landscape of the Mahi River basin in southern Rajasthan is locally known as Vagad. This region primarily includes the districts of Dungarpur and Banswara. The term describes the undulating terrain and the cultural identity of the people living in this hilly tract, where the Mahi River creates a series of ravines and fertile valleys.

48. (1) Both A and R are true and R is the correct explanation of A.
The Hadoti Plateau is highly productive for cotton and soybean because of its medium black soil, also known as regur soil. This soil was formed from the weathering of basaltic lava and possesses excellent moisture retention properties. These characteristics provide the necessary nutrients and water stability required for high-yield commercial farming, making the region a major agricultural powerhouse in the state.

49. (2) Johad
In the semi-arid Shekhawati region, traditional earthen check dams or ponds used to capture rainwater are known as Johads. These structures are vital for groundwater recharge and providing water for livestock and local use. They represent a centuries-old indigenous community-based water management system that helps the region cope with limited and erratic rainfall by conserving every possible drop of water.

50. (1) Alwar Hills
The hills located in the Mewat region are commonly referred to as the Alwar Hills. They form a part of the Northern Aravalli system and are characterized by their scattered and broken nature. These hills play a significant role in influencing the local micro-climate and drainage patterns of the Alwar and Bharatpur districts, acting as a transitional and defining physiographic feature.

51. (3) An underground water-bearing geological aquifer strip.
The Lathi Series is a renowned geological formation in the Jaisalmer district of western Rajasthan. It consists of a long, narrow strip of water-bearing sedimentary rocks that act as a productive underground aquifer. This feature is crucial for the desert region, as it provides a reliable source of fresh water amidst the surrounding saline groundwater, supporting local agriculture and human settlements.

52. (4) I, II and III
Rajasthan became India's largest state in 2000 following the creation of Chhattisgarh. It maintains a unique geopolitical position bordering five states and Pakistan. Its vast area of 3,42,239 square kilometers is comparable in size to the United Kingdom and slightly smaller than Germany, underscoring its immense scale relative to many independent nations and its significance within the Indian union.

53. (3) Bhilwara Supergroup and Delhi Supergroup
Geologically, the rocks of the Aravalli Range are primarily categorized into two major supergroups: the Bhilwara Supergroup and the Delhi Supergroup. The Bhilwara Supergroup comprises the older basement rocks, while the Delhi Supergroup represents younger metamorphic sequences. These formations together tell the story of ancient tectonic activities and mountain-building processes that occurred during the Precambrian era in the Indian subcontinent.

54. (3) Jurassic Period
The Akal Wood Fossil Park, located near Jaisalmer, contains petrified wood fossils that date back to the Jurassic Period, approximately 180 million years ago. These fossils provide scientific evidence that the now-arid Thar Desert was once a lush, humid forest near a sea. This site is essential for understanding the dramatic paleoclimatic and geological transformations that the entire region underwent.

55. (4) A-iv, B-i, C-ii, D-iii
Mountain passes, or Nals, are critical for connectivity across the Aravalli Range. Desuri Nal connects Rajsamand and Pali, while Hathiguda Ki Nal is situated near the historic Kumbhalgarh Fort. Goram Ghat is famous for its scenic railway

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route through the mountains. Someshwar Nal facilitates travel between Pali and Udaipur. These natural gaps have historically served as vital trade and military routes.

56. (1) Jodhpur
The international border with Pakistan, the Radcliffe Line, is shared by several districts in western Rajasthan, including Jaisalmer, Bikaner, Sriganganagar, Barmer, Anupgarh, and the newly created Phalodi. Jodhpur, however, is located further inland toward the east. It does not touch the international boundary, making it an interior district within the Western Sandy Plains rather than a frontline border district of the state.

57. (3) Barmer
Barmer is a unique district in Rajasthan that shares both an international and an interstate boundary. To the west, it borders Pakistan along the Radcliffe Line. To the south, it shares a border with the state of Gujarat. This dual status makes it a strategically important region for national security and an essential hub for interstate trade and cultural exchange between neighboring regions.

58. (3) IV only
The Eastern Plains are composed of fertile older and newer alluvium, featuring the Banas and Chambal basins. However, stating they receive the lowest average annual rainfall is incorrect. That distinction belongs to the Western Sandy Plains. The Eastern Plains actually enjoy moderate to high rainfall, which, combined with the fertile soil, makes them the most agriculturally productive region in all of Rajasthan.

59. (4) Chambal Basin
Utkhat or Badland topography is the defining geomorphological feature of the Chambal River basin. Severe gully erosion caused by the river has created a rugged landscape of deep ravines and narrow ridges, particularly in Dholpur, Karauli, and Sawai Madhopur. These ravines, locally known as Dang, make the land unsuitable for regular agriculture but provide a unique, albeit difficult, terrain for regional ecology.

60. (1) Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Gujarat
Moving clockwise from the north, Rajasthan first shares a border with Punjab. Continuing east and then south, it meets Haryana, followed by a short stretch with Uttar Pradesh. The longest border is with Madhya Pradesh to the southeast, and finally, the state shares its southwestern boundary with Gujarat. This sequence defines the complete interstate perimeter of Rajasthan along its diverse borders.

61. (3) Eastern Plains
Among all the physiographic divisions of Rajasthan, the Eastern Plains have the highest population density. This is primarily due to the fertile alluvial soil deposited by the Banas and Chambal rivers, which supports intensive agriculture. Additionally, the region enjoys a more favorable climate and better water availability compared to the arid west, attracting large-scale human settlement and extensive urban development.

62. (2) I, II, IV and V only
Rajasthan's longest interstate border is with Madhya Pradesh, while Punjab has the shortest. Jhalawar district shares the longest individual interstate boundary, specifically with Madhya Pradesh. Three districts, Deeg, Bharatpur, and Dholpur, border Uttar Pradesh. These boundaries are essential for regional administration, as they define the spatial limits through which resources, people, and trade move between Rajasthan and its neighboring Indian states.

63. (1) Udaipur Division
The Mewar Rock or the dominant Aravalli structural base is a central feature of the southern mountainous terrain. This region forms the core of the Udaipur administrative division. The division's geography is characterized by rugged Aravalli hills, rich mineral deposits, and significant forest cover, reflecting the ancient geological foundations that define the physical and economic character of southern Rajasthan and its history.

64. (2) Evidence of extensive glaciation during the Permo-Carboniferous period.
The Bap Boulder Bed, located near Jodhpur, is a significant geological formation that provides

(2) Som, Jakham, Anas, Chap
(3) Wakal, Hathmati, Meshwa, Vatrak
(4) Parbati, Sesa, Kher, Utangan
(5) Question not attempted

31. Which of the following rivers is unique in Rajasthan for crossing the Tropic of Cancer twice?
(1) Mahi
(2) Luni
(3) Chambal
(4) Sabarmati
(5) Question not attempted

32. Match List-I (Tributary of Mahi) with List-II (Origin) and select the correct answer using the codes given below:
List-I: (Tributary of Mahi)
A. Som
B. Jakham
C. Anas
D. Chap
List-II: (Origin)
i. Chhoti Sadri, Pratapgarh
ii. Bichhameda, Udaipur
iii. Ambor, Madhya Pradesh
iv. Kalinjra, Banswara
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iii, D-iv
(3) A-ii, B-iii, C-i, D-iv
(4) A-iii, B-i, C-ii, D-iv
(5) Question not attempted

33. Consider the following statements regarding the dams and projects on the Mahi river basin:
I. The Mahi Bajaj Sagar Dam is located in the Banswara district of Rajasthan.
II. The Kadana Dam is constructed on the Mahi river in the state of Gujarat.
III. The Kagdi Pickup Weir is a part of the Mahi river project system.
IV. The Som-Kamla-Amba irrigation project is situated on its tributary, the Som river.
V. The Sujlam Suflam water conservation campaign is associated with this river basin.
Which of the above statements is/are correct?
(1) I, II, III and IV only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

34. Identify the incorrect statement regarding the course and characteristics of the Mahi river.
(1) It flows northwards to merge with the Luni river in the Barmer district.
(2) It originates from the Amradhu hills near Dhar district in Madhya Pradesh.
(3) It enters Rajasthan at Khandu village in the Banswara district.
(4) The river system eventually discharges its waters into the Gulf of Khambhat.
(5) Question not attempted

35. Which of the following rivers is the odd one out, as it is not a tributary of the Mahi river?
(1) Som
(2) Jakham
(3) Eru
(4) Moran
(5) Question not attempted

36. The Sabarmati river originates from the Aravalli hills located in which of the following tehsils of Rajasthan?
(1) Gogunda, Udaipur
(2) Kumbhalgarh, Rajsamand
(3) Vallabhnagar, Udaipur
(4) Kotra, Udaipur
(5) Question not attempted

37. Match List-I (Tributary of Sabarmati) with List-II (Characteristic/Location) and select the correct answer using the codes given below:
List-I: (Tributary of Sabarmati)
A. Wakal
B. Sei
C. Hathmati
D. Vatrak
List-II: (Characteristic/Location)
i. Originates in Dungarpur
ii. Originates in Udaipur, joined by Mansi
iii. Famous water tunnel constructed over it
iv. Originates in Gujarat border region
(1) A-iii, B-ii, C-i, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-ii, B-iii, C-iv, D-i
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

38. Consider the following statements about the Sabarmati river:
I. It originates in Rajasthan but its major

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where ancient marine sediments have been weathered over time.

74. (1) A desert plain consisting of gravel, pebbles, and sand.
In the geographical context of Rajasthan, a "Reg" refers to a stony desert surface. It is a desert plain composed of a mixture of gravel, pebbles, and sand. This landform is created when wind removes the finer sand particles, leaving behind a layer of coarser materials. It represents one of the three major types of desert surfaces found throughout the Thar Desert.

75. (4) A-iv, B-i, C-ii, D-iii
Rajasthan is divided into four major physiographic units with varying spatial coverage. The Western Sandy Plains are the largest, occupying 61.11 percent of the state. The Eastern Plains cover 23.3 percent, followed by the Aravalli Range at 9.0 percent. The Southeastern Plateau, or Hadoti region, is the smallest, accounting for 6.89 percent of the total geographical area of the state.

76. (2) Bangar
In the Eastern Plains of Rajasthan, older alluvial deposits that are situated at a higher elevation and are generally not reached by annual river floods are termed Bangar. These areas are distinct from the newer alluvium, or Khadar, which is found in lower-lying floodplains. Bangar regions are often more stable for settlements and have been under agricultural use for longer historical periods.

77. (3) It acts as a divide restricting the eastward spread of the desert.
The most significant climatic role of the Aravalli Range is acting as a physical barrier that restricts the eastward expansion of the Thar Desert. By spanning the state from southwest to northeast, it prevents the wind-blown sands of the western arid region from encroaching upon the more fertile and humid eastern plains, thus preserving the ecological balance of the eastern and southern districts.

78. (1) I, II and IV only
The Mewat region serves as a transition between the arid west and the Gangetic plains, featuring the Sahibi and Ruparel rivers. It includes isolated hillocks from the Northern Aravalli system. However, it is not confined solely to Bharatpur, as it also encompasses significant parts of the Alwar district. These characteristics define its unique position as a micro-physiographic and cultural zone in Rajasthan.

79. (1) Jhalawar
Jhalawar is the district in Rajasthan that shares the longest continuous interstate boundary with another state. Its border with Madhya Pradesh is extensive, wrapping around three sides of the district. This unique geographical positioning makes Jhalawar a critical area for interstate relations and trade, as it is deeply integrated into the regional landscape of the neighboring state of Madhya Pradesh along its borders.

80. (1) I, II, III and IV only
Rajasthan's geography is defined by ancient residual mountains, recent alluvial deposits, and volcanic plateaus. The Aravallis date to the Precambrian, while the Eastern Plains are Quaternary. The Thar Desert is linked to the Peninsular Block. However, the Great Boundary Fault separates the Aravallis from the Vindhyan Supergroup in the southeast, not the desert in the west, which is a common misconception.

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evidence of extensive glaciation during the Permo-Carboniferous period. The presence of large, smoothed boulders transported by ice indicates that this region, now a desert, was once covered by glaciers. This discovery is crucial for reconstructing the paleoclimatic history and the ancient continental drift of the Indian plate.

65. (2) A-ii, B-iii, C-i, D-iv
Desert landforms in Rajasthan are classified by their surface characteristics. A Hamada is a barren, rocky desert. A Reg consists of a mixture of sand and gravel. An Erg is the classic sandy desert dominated by dunes. A Runn or Tat refers to a shallow saline depression that often becomes a temporary lake after rainfall, illustrating the desert's varied and complex geomorphology.

66. (3) 550 km
The Aravalli Range spans a total length of approximately 692 kilometers from Palanpur in Gujarat to Delhi. Out of this total, about 550 kilometers lie within the state of Rajasthan, accounting for roughly 80 percent of the range's total length. This dominance makes the Aravallis the most significant topographical feature influencing the state's climate, drainage, and rich mineral distribution.

67. (3) Vindhyan Scarplands and Deccan Lava Plateau
The Southeastern Plateau, or Hadoti region, is structurally composed of two distinct sub-units: the Vindhyan Scarplands and the Deccan Lava Plateau. The scarplands are characterized by massive sandstone cliffs, while the lava plateau is formed from basaltic volcanic activity. Together, these formations create a rugged landscape that differs significantly from the sandy plains and the ancient fold mountains found elsewhere in Rajasthan.

68. (3) A is true but R is false.
The Western Sandy Plains experience a very high diurnal range of temperature, meaning the difference between day and night temperatures is extreme. However, this is because sand has a low specific heat capacity, allowing it to heat up very quickly during the day and cool down rapidly at night. The assertion is true, but the reasoning provided is scientifically incorrect.

69. (3) The Mount Abu Batholith (Aravalli Range)
Nakki Lake is a unique high-altitude lake situated in Mount Abu, within the Sirohi district. It is located on the Mount Abu Batholith, which is a massive igneous rock formation within the southern Aravalli Range. According to local legend, the lake was dug by the nails of gods, but geologically it represents a significant feature in the state's rugged mountain topography and relief.

70. (1) I, III, IV, II
Rajasthan's geological history spans billions of years. The oldest formations are the Aravalli Supergroup rocks. These were followed by the sedimentary Vindhyan Supergroup and the volcanic Deccan Traps. The most recent features are the Quaternary aeolian deposits, including the sand dunes that continue to shift across the Thar Desert today. This sequence reflects the long and complex structural evolution of the state.

71. (4) Building stones like sandstone and limestone.
While the Aravalli Range is famous for metallic ores, the Hadoti Plateau is the primary source of building stones in Rajasthan. The region provides vast quantities of high-quality sandstone and limestone used in construction across India. This economic strength is rooted in the sedimentary and volcanic geological formations of the southeastern part of the state, supporting a large-scale quarrying and processing industry.

72. (2) I and II only
Guru Shikhar is located in the Mount Abu region of Sirohi district and was aptly named the "Peak of the Saints" by Col. James Tod. Standing at 1722 meters, it is the highest point in Rajasthan. However, it is situated in the southern part of the Aravalli Range, not the northern section, which is characterized by much lower and fragmented elevations.

73. (3) Hamada
The specific type of desert found around Jaisalmer, Ramgarh, and Pokhran, which is characterized by exposed sedimentary rocks and a lack of significant sand cover, is known as a Hamada. This rocky terrain stands in contrast to the shifting dunes of the sandy Erg desert. It provides evidence of the area's geological past,

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II. The Kothari river joins the Banas at Nandray in Bhilwara.
III. The Khari river originates from the Bijral village hills in Rajsamand.
IV. The Morel river originates in the hills of Udaipur and is a right-bank tributary.
Which of the above statements is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) II and III only
(5) Question not attempted

8. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The Banas river is historically and culturally known as 'Van ki Asha' (Hope of the Forest).
Reason (R): It is the only major river in Rajasthan that flows continuously throughout the year without drying up.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. Arrange the following confluences (Trivenis) on the Banas river in sequential order from its origin to its mouth:
I. Confluence with Khari and Dai at Rajmahal
II. Confluence with Berach and Menal at Bigod
III. Confluence with Chambal and Seep at Rameshwaram Ghat
Which of the above sequences is correct?
(1) II, I, III
(2) I, II, III
(3) II, III, I
(4) III, I, II
(5) Question not attempted

10. Which of the following rivers is the odd one out, as it is not a tributary of the Banas river?
(1) Parwan
(2) Dai
(3) Mashi
(4) Kalisil
(5) Question not attempted

11. The Chambal river, renowned for its extensive ravine topography, originates from which of the following locations?
(1) Amarkantak Plateau in Madhya Pradesh
(2) Bagli Hills in Madhya Pradesh
(3) Chhoti Sadri in Rajasthan
(4) Janapav Hills in Madhya Pradesh
(5) Question not attempted

12. Consider the following statements regarding the Chambal river and its associated projects:
I. The Gandhi Sagar Dam is located in Madhya Pradesh.
II. The Rana Pratap Sagar Dam is located in Rawatbhata, Rajasthan.
III. The Jawahar Sagar Dam is situated near Kota.
IV. The Kota Barrage is utilized exclusively for irrigation purposes.
V. The river forms a natural boundary between Rajasthan and Madhya Pradesh.
Which of the above statements is/are correct?
(1) I, II and V only
(2) II, III, IV and V only
(3) I, III and IV only
(4) I, II, III, IV and V
(5) Question not attempted

13. Which of the following phenomena is the primary cause for the formation of the extensive 'Utkhat Bhumi' (Badland topography) along the basin of the Chambal river?
(1) Severe wind erosion during the summer months
(2) High levels of tectonic activity in the vindhyan scarplands
(3) Intense gully erosion caused by the fast-flowing river
(4) Prolonged salinization of the soil
(5) Question not attempted

14. Match List-I (Tributary of Chambal) with List-II (Origin location) and select the correct answer using the codes given below:
List-I: (Tributary of Chambal)
A. Kali Sindh
B. Parvati
C. Banas
D. Brahmani

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CHAPTER 18
Rivers and Lakes

1. Which of the following drainage systems encompasses the largest geographical area of Rajasthan?
(1) Arabian Sea drainage system
(2) Internal drainage system
(3) Bay of Bengal drainage system
(4) Luni basin drainage system
(5) Question not attempted

2. Consider the following statements regarding the river systems of Rajasthan:
(1) The Aravalli mountain range acts as the primary water divide between the Bay of Bengal and Arabian Sea drainage systems.
(2) The rivers of the state are divided into four major drainage systems.
(3) Most rivers originating from the western slopes of the Aravallis flow into the Bay of Bengal.
(4) The internal drainage system is strictly confined to the south-eastern plateau region.
(5) Question not attempted

3. Consider the following statements about the internal drainage system of Rajasthan:
I. It accounts for approximately 60% of the total drainage area of the state.
II. Rivers in this system do not reach any ocean or major sea.
III. The Kantli and Kakni are prominent rivers belonging to this system.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

4. Match List-I (River) with List-II (Originating District in Rajasthan) and select the correct answer using the codes given below:
List-I: (River)
A. Luni
B. Banas
C. Kantli
D. Banganga
List-II: (Originating District)
i. Sikar
ii. Ajmer
iii. Rajsamand
iv. Jaipur
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-i, C-iii, D-iv
(3) A-iii, B-ii, C-iv, D-i
(4) A-ii, B-iii, C-i, D-iv
(5) Question not attempted

5. Identify the incorrect statement regarding the classification of drainage systems in Rajasthan.
(1) The Luni river basin is a part of the Arabian Sea drainage system.
(2) The Chambal river is the only perennial river in the Bay of Bengal drainage system of Rajasthan.
(3) The internal drainage system is completely absent in the arid regions of western Rajasthan.
(4) The proportion of internal drainage area is the highest among all drainage classifications in the state.
(5) Question not attempted

6. The Banas river, which is the longest river flowing entirely within Rajasthan, originates from which of the following hills?
(1) Janapav Hills
(2) Khamnor Hills
(3) Nag Pahar
(4) Bairath Hills
(5) Question not attempted

7. Consider the following statements regarding the tributaries of the Banas river:
I. The Berach river originates from the bucket hills in Udaipur.

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List-II: (Region/Context)
i. Local name in Pakistan
ii. Flood plain in Hanumangarh
iii. Ancient Vedic name
iv. Local name in Haryana
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

23. Identify the incorrect statement regarding the Ghaggar river.
(1) It enters Rajasthan at Tibbi tehsil in Hanumangarh district.
(2) During periods of heavy rainfall, its water reaches Fort Abbas in Pakistan.
(3) It is the longest river of the internal drainage system traversing through multiple states before entering Rajasthan.
(4) It ultimately drains into the Arabian Sea near the Gulf of Kutch.
(5) Question not attempted

24. Consider the following statements about the Ghaggar river:
I. It is commonly referred to as the 'Dead River' in local parlance.
II. The ancient archaeological site of Kalibangan is situated on its banks.
III. It originates from the western slopes of the Aravalli range in Rajasthan.
Which of the above statements is/are incorrect?
(1) I and II only
(2) III only
(3) II and III only
(4) I only
(5) Question not attempted

25. The flood plain of the Ghaggar river in the Hanumangarh and Sriganganagar districts is locally known by which of the following terms?
(1) Khadar
(2) Bhabar
(3) Nali
(4) Rohi
(5) Question not attempted

26. The Banganga river, significant for eastern Rajasthan, originates from which of the following locations?
(1) Bairath Hills
(2) Udaynath Hills
(3) Khandela Hills
(4) Sewar Hills
(5) Question not attempted

27. The Banganga river is sometimes referred to as 'Rindhit Nadi' (Beheaded River). Which of the following concepts best explains this classification?
(1) The river has completely dried up due to the construction of numerous dams near its origin.
(2) The river frequently changes its course during the monsoon, abandoning its original channel.
(3) The river was artificially diverted during the medieval period for irrigation.
(4) It fails to reach the Yamuna and spreads into the Bharatpur plains.
(5) Question not attempted

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28. Consider the following statements regarding the Gambhir river:
I. It originates from the hills of Karauli district.
II. It flows through Sawai Madhopur, Bharatpur, and Dholpur before entering Uttar Pradesh.
III. It directly joins the Yamuna river in Uttar Pradesh.
IV. The famous Panchana Dam is constructed on the confluence of its tributaries.
Which of the above statements is/are correct?
(1) I, II and IV only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

29. The Jamwa Ramgarh Dam, historically crucial for the water supply of Jaipur city, is situated on which of the following rivers?
(1) Sabi
(2) Ruparel
(3) Banganga
(4) Gambhir
(5) Question not attempted

30. Which of the following groups of rivers are the major tributaries of the Gambhir river?
(1) Khari, Dai, Mashi, Morel

(2) The Parwan river is a tributary of the Kali Sindh river.
(3) The Kali Sindh river remains entirely within Rajasthan before its confluence.
(4) Both rivers originate in Madhya Pradesh and flow northwards into Rajasthan.
(5) Question not attempted

46. The Kakni (or Kakneya) river, the smallest river of the internal drainage system, originates from which of the following locations?
(1) Khandela hills, Sikar
(2) Sewar hills, Jaipur
(3) Udaynath hills, Alwar
(4) Kotari village, Jaisalmer
(5) Question not attempted

47. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Rajasthan possesses the highest proportion of internal drainage area among all Indian states.
Reason (R): The state is characterized by an arid climate, low and erratic rainfall, sandy terrain, and the rain-shadow effect of the Aravalli range.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

48. Consider the following statements about the rivers of the internal drainage system:
I. The Sabi river originates from the Sewar hills in Jaipur rural district.
II. The Ruparel river originates from the Udaynath hills in Alwar district.
III. The Kantli river divides the Shekhawati region and its basin is known as Torawati.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

49. Which of the following statements correctly describes the outcome of the Kakni river during periods of substantial rainfall?
(1) It breaches its banks and flows directly into the Luni river.
(2) It fills a local depression to form the Bhuj Lake in Jaisalmer.
(3) It crosses the international border and enters the Sindh province.
(4) It merges with the dry bed of the ancient Saraswati river.
(5) Question not attempted

50. The Ruparel river is locally known by which of the following alternative names in its surrounding region?
(1) Varah and Laswari
(2) Drishadvati and Nali
(3) Rindhit and Arjun ki Ganga
(4) Maru Ganga and Lavanvati
(5) Question not attempted

51. Pushkar Lake, considered the most sacred lake in Rajasthan, is geographically classified primarily as which type of lake?
(1) Ox-bow lake
(2) Glacial lake
(3) Natural crater/caldera lake
(4) Tectonic fault lake
(5) Question not attempted

52. Consider the following statements regarding Pushkar Lake:
I. It is surrounded by exactly 52 bathing ghats.
II. The world's most prominent temple dedicated to Lord Brahma is situated near it.
III. The tradition of Deepdaan (offering floating lamps) is a major cultural event here.
IV. A comprehensive lake cleaning and desilting project was undertaken with the financial and technical assistance of Canada.
Which of the above statements is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

53. The Siliserh Lake, known for its scenic beauty and often referred to as the 'Nandan Kanan'

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catchment and flow area lies in Gujarat.
II. The city of Ahmedabad and Gandhinagar are situated on its banks.
III. The Mansi-Wakal water tunnel project was built to transfer its basin water to the Pichola lake.
IV. It ultimately drains into the Gulf of Kutch.
Which of the above statements is/are correct?
(1) I, II and III only
(2) I, III and IV only
(3) II, III and IV only
(4) I, II, III and IV
(5) Question not attempted

39. Identify the correct statement regarding the tributaries of the Sabarmati river in Rajasthan.
(1) The Sei river originates from the Pali district and flows eastward to join the Sabarmati.
(2) The Sabarmati receives maximum water contribution from its right bank tributaries in Rajasthan.
(3) None of its tributaries flow through the Udaipur district.
(4) The Wakal, Hathmati, Meshwa, and Vatrak are significant left and right bank tributaries.
(5) Question not attempted

40. Arrange the following rivers in descending order of their total length flowing entirely within the geographical boundaries of Rajasthan:
I. Banas
II. Luni
III. Kantli
IV. Kakni
Which of the above represents the correct sequence?
(1) I, II, III, IV
(2) II, I, III, IV
(3) I, III, II, IV
(4) IV, III, II, I
(5) Question not attempted

41. The Kali Sindh river, a major right-bank tributary of the Chambal, enters Rajasthan in which of the following districts?
(1) Baran
(2) Kota
(3) Jhalawar
(4) Bundi
(5) Question not attempted

42. Which of the following pairs of river confluence and associated historical fort is correctly matched?
(1) Ahu and Kali Sindh - Gagron Fort
(2) Kali Sindh and Parvati - Shergarh Fort
(3) Chambal and Bamni - Kumbhalgarh Fort
(4) Parwan and Kali Sindh - Taragarh Fort
(5) Question not attempted

43. Consider the following statements regarding the Parvati river:
I. It originates from the Sehore district of Madhya Pradesh.
II. It enters Rajasthan at Kariya Hat in Baran district.
III. It forms a natural boundary between Rajasthan and Madhya Pradesh for some distance.
IV. It joins the Chambal river at Palia near the border of Sawai Madhopur.
V. The Lhasi and Berni are its prominent tributaries.
Which of the above statements is/are correct?
(1) I, II, III and IV only
(2) II, III, IV and V only
(3) I, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

44. Match List-I (Tributary) with List-II (Main River) for the eastern drainage system of Rajasthan:
List-I: (Tributary)
A. Parwan
B. Ahu
C. Lhasi
D. Mej
List-II: (Main River)
i. Chambal
ii. Kali Sindh
iii. Parvati
iv. Kali Sindh
(1) A-i, B-ii, C-iv, D-iii
(2) A-ii, B-iv, C-iii, D-i
(3) A-iv, B-iii, C-ii, D-i
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

45. Identify the incorrect statement regarding the Kali Sindh and Parvati river systems.
(1) The Kali Sindh joins the Chambal river at Nonera village located in the Kota district.

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List-II: (Origin location)
i. Sehore region, Madhya Pradesh
ii. Bagli Hills, Madhya Pradesh
iii. Bhensrorgarh, Rajasthan
iv. Khamnor Hills, Rajasthan
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-iv, C-i, D-iii
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

15. Identify the correct statement regarding the Chambal river in Rajasthan.
(1) The Chambal river forms the famous Chuliya waterfall near Bhensrorgarh.
(2) It enters Rajasthan state at Kariya Hat village situated in Baran district.
(3) It flows in a consistent north-to-south direction within the state boundaries.
(4) It discharges its water directly into the Bay of Bengal drainage system.
(5) Question not attempted

16. The Luni river, the most significant river of western Rajasthan, originates from which of the following?
(1) Pushkar Valley
(2) Nag Pahar
(3) Tara Garh Hills
(4) Harsh Nath Hills
(5) Question not attempted

17. Consider the following rivers:
I. Jawai
II. Sukri
III. Bandi
Which of the following correctly identifies the main river of which these are tributaries?
(1) Mahi
(2) Luni
(3) Sabarmati
(4) Banas
(5) Question not attempted

18. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The water of the Luni river is sweet from its origin up to Balotra, after which it turns saline.
Reason (R): The soil in the desert region beyond Balotra contains high amounts of salt particles, which dissolve into the river water.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

19. Which of the following is the most appropriate statement distinguishing the Jojari river from the other tributaries of the Luni river?
(1) It is considered the longest tributary of the Luni and joins from the left bank.
(2) It is categorized as a perennial river unlike other seasonal ephemeral tributaries.
(3) It joins the Luni from the right bank without originating in the Aravallis.
(4) It is documented as the only tributary that merges into the Luni before Ajmer city.
(5) Question not attempted

20. Which of the following represents the correct north to south sequence of the confluence of these tributaries with the Luni river?
(1) Guhiya, Bandi, Sukri, Jawai
(2) Jawai, Sukri, Bandi, Guhiya
(3) Bandi, Guhiya, Jawai, Sukri
(4) Sukri, Bandi, Jawai, Guhiya
(5) Question not attempted

21. The Ghaggar river, a major seasonal river of northern Rajasthan, originates from which of the following regions?
(1) Aravalli Range in Haryana
(2) Vindhyan Escarpment in Madhya Pradesh
(3) Shivalik Hills in Himachal Pradesh
(4) Bairath Hills in Rajasthan
(5) Question not attempted

22. Match List-I (Local Name/Feature) with List-II (Region/Context) related to the Ghaggar river and select the correct answer using the codes given below:
List-I: (Local Name/Feature)
A. Nali
B. Hakra
C. Sotar
D. Drishadvati

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of Rajasthan, was constructed by which of the following rulers?
(1) Maharaja Jai Singh
(2) Maharana Raj Singh
(3) Maharaja Vinay Singh
(4) Maharaja Sawai Madho Singh
(5) Question not attempted

54. Identify the incorrect statement regarding the natural lakes of Rajasthan.
(1) Pushkar Lake is a freshwater lake located in the Ajmer district.
(2) Siliserh Lake is an important natural saltwater lake situated in the Alwar district.
(3) The Pushkar fair, held annually on Kartik Purnima, heavily relies on the lake's cultural significance.
(4) Sand mining and the sinking of deep borewells have severely impacted the water retention capacity of Pushkar Lake.
(5) Question not attempted

55. The declining water level in Pushkar Lake over recent decades is best attributed to which of the following combinations of cause and effect?
(1) Increased salinity causing increased evaporation rates.
(2) High levels of tectonic activity in the vindhyan scarplands.
(3) Extensive afforestation programs around the lake basin absorb all surface runoff.
(4) Feeder streams are diverted and groundwater is extracted in the catchment.
(5) Question not attempted

56. The Sambhar Lake is the largest inland salt lake in India. Approximately what percentage of India's total salt production is derived from this lake?
(1) 4.5%
(2) 8.7%
(3) 12.3%
(4) 15.6%
(5) Question not attempted

57. Which of the following represents the correct west to east geographical sequence of the given lakes in Rajasthan?
(1) Pachpadra, Lunkaransar, Sambhar, Siliserh
(2) Lunkaransar, Pachpadra, Siliserh, Sambhar
(3) Sambhar, Pachpadra, Lunkaransar, Siliserh
(4) Pachpadra, Sambhar, Lunkaransar, Siliserh
(5) Question not attempted

58. Consider the following statements about Sambhar Lake:
I. The Mendha and Rupangarh rivers drain their water into it.
II. The Khari and Khandela rivers are also prominent feeders of this lake.
III. It was designated as a Ramsar Wetland site of international importance in 1990.
IV. Hindustan Salts Limited operates a major salt extraction facility here.
V. According to the Bijolia inscription, the lake was constructed by Vasudev Chauhan.
Which of the above statements is/are correct?
(1) I, II, III and V only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

59. Which of the following pairs of 'Salt Lake' and 'District' is correctly matched?
(1) Degana - Jaisalmer
(2) Kavod - Nagaur
(3) Kuchaman - Barmer
(4) Tal Chhapar - Churu
(5) Question not attempted

60. A massive mortality event of migratory birds occurred at Sambhar Lake in recent years. What was the scientifically established cause of this ecological disaster?
(1) Heavy metal poisoning from upstream industrial effluents
(2) An outbreak of Avian Botulism
(3) Sudden extreme depletion of dissolved oxygen
(4) Starvation due to collapse of local algae populations
(5) Question not attempted

61. The Jaisamand Lake, also known as Dhebar Lake, was constructed by damming which of the following rivers?
(1) Ahar
(2) Berach
(3) Gomti
(4) Som
(5) Question not attempted

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(1) Jawai
(2) Bandi
(3) Sukri
(4) Khari
(5) Question not attempted

77. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Most freshwater lakes in the Aravalli and southern regions of Rajasthan are artificial rather than natural.
Reason (R): They were historically constructed by local rulers to conserve rainwater for drinking and irrigation purposes in a semi-arid climate.
Select the correct answer from the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

78. In which year was the Rajasthan State Wetland Authority constituted to enforce the Wetland (Conservation and Management) Rules in the state?
(1) 2010
(2) 2017
(3) 2019
(4) 2022
(5) Question not attempted

79. Under the Wetland (Conservation and Management) Rules implemented in Rajasthan, which of the following activities is strictly prohibited within the notified boundary of a wetland?
(1) Setting up new industries or expanding existing ones.
(2) Traditional fishing by local communities
(3) Boating using non-motorized boats
(4) Conducting scientific research and regular water quality monitoring.
(5) Question not attempted

80. Which of the following represents the most appropriate primary objective of the National Plan for Conservation of Aquatic Eco-systems (NPCA) as applied to the lakes of Rajasthan?
(1) To convert historical lakes into fully commercial fisheries to boost state revenue
(2) To holistically conserve and restore lakes and wetlands for improvement of water quality and biodiversity
(3) To drain severely polluted lakes and reclaim the land for urban housing
(4) To artificially link all natural and man-made lakes of the state into a single navigation channel
(5) Question not attempted

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(1) Subhash Udyan (Daulat Bagh) was laid out by Akbar, and the marble Baradari was built by Jahangir.
(2) Subhash Udyan (Daulat Bagh) was laid out by Jahangir, and the marble Baradari was built by Shah Jahan.
(3) The lake itself was deepened by Aurangzeb, and the pavilions were added by Shah Jahan.
(4) The Daulat Bagh was built by Shah Jahan, and the Baradari was constructed by Arnoraja.
(5) Question not attempted

71. Eutrophication, a major ecological issue threatening several freshwater lakes in Rajasthan, is primarily caused by which of the following?
(1) Accumulation of heavy metals from industrial effluent.
(2) Depletion of water due to prolonged severe droughts.
(3) High rates of natural evaporation that concentrate dissolved chemical salts.
(4) High nutrient levels from agricultural runoff and urban sewage.
(5) Question not attempted

72. Consider the following lakes in Rajasthan:
I. Fateh Sagar
II. Pichola
III. Ana Sagar
IV. Pushkar
V. Nakki
Which of the above lakes are included in the National Lake Conservation Plan (NLCP) for environmental restoration?
(1) I, II and IV only
(2) I, II, III and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

73. When addressing the ecological importance of Rajasthan's lakes, which of the following is an immediate biological consequence of lake eutrophication?
(1) Increase in the diversity of endemic fish species
(2) Significant decrease in the turbidity of the lake water
(3) Formation of dense algal blooms that deplete dissolved oxygen
(4) Immediate drop in the water temperature supporting cold-water flora
(5) Question not attempted

74. Match List-I (Lake/Wetland) with List-II (Ecological Status / Conservation Feature) and select the correct answer using the codes given below:
List-I: (Lake/Wetland)
A. Sambhar Lake
B. Keoladeo Ghana
C. Mansagar Lake
D. Ana Sagar Lake
List-II: (Ecological Status / Conservation Feature)
i. Recognised as a Ramsar Wetland Site in 1990
ii. Recognised as a Ramsar Wetland Site in 1981
iii. Restored Jal Mahal integrating private-public partnership
iv. Historic urban lake facing severe encroachment and siltation
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

75. Identify the incorrect statement regarding lake conservation programs in Rajasthan.
(1) The State Wetland Authority is responsible for identifying and notifying wetlands for conservation under the Wetland Rules.
(2) Mansagar Lake in Jaipur is widely cited as a successful model of lake restoration in the state.
(3) De-weeding, bio-remediation, and catchment area treatment are standard techniques employed under the NLCP.
(4) The National Lake Conservation Plan (NLCP) is funded entirely (100%) by the State Government of Rajasthan.
(5) Question not attempted

76. Which of the following rivers of the Luni basin has suffered the most severe ecological degradation due to the discharge of untreated chemical effluents from the textile dyeing and printing industries in Pali?

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entering Uttar Pradesh to join the Yamuna. Its basin is significant for the Panchana Dam, built at the confluence of five tributaries. This river system plays a vital role in the irrigation and water supply of the Bharatpur region, contributing to the agricultural productivity of the eastern plains.

29. (3) Banganga
The Jamwa Ramgarh Dam is a major historical reservoir located on the Banganga River in Jaipur Gramin district. For many decades, it served as the primary source of drinking water for Jaipur city. Although the dam has faced severe water shortages and drying in recent years due to catchment degradation, its association with the Banganga remains a key feature of the region's infrastructure.

30. (4) Parbati, Sesa, Kher, Utangan
The Gambhir River, which flows through eastern Rajasthan, is fed by several smaller streams. Its major tributaries include the Parbati, Sesa, Kher, and Utangan. These rivers collect runoff from the hilly terrains of Karauli and Bharatpur. Together, they form a drainage network that eventually contributes to the Yamuna basin, supporting the irrigation needs and local ecology of the surrounding plains.

31. (1) Mahi
The Mahi River is globally unique for its "U-shaped" course that causes it to cross the Tropic of Cancer twice. It enters Rajasthan from Madhya Pradesh, flows northwards into Banswara and Dungarpur, and then turns south towards Gujarat. This peculiar geographical path makes it a significant landmark in the study of Rajasthan's hydrology and its intersection with global latitude lines.

32. (2) A-ii, B-i, C-iii, D-iv
The Mahi River basin in southern Rajasthan is supported by tributaries with distinct origins. The Som River rises from Bichhameda in Udaipur, while the Jakham originates in Chhoti Sadri, Pratapgarh. The Anas comes from Ambor in Madhya Pradesh, and the Chap starts in Kalinjra, Banswara. These rivers converge to provide essential water resources for the tribal regions of the Vagad area.

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33. (4) I, II, III, IV and V
The Mahi River basin features several critical water management projects across Rajasthan and Gujarat. Key structures include the Mahi Bajaj Sagar Dam, Kadana Dam, and Som-Kamla-Amba project. These facilities provide irrigation and hydroelectric power. Additionally, the Sujlam Suflam campaign focuses on water conservation within the basin, highlighting the river's multi-faceted importance for regional development and sustainable resource management.

34. (1) It flows northwards to merge with the Luni river in the Barmer district.
The Mahi River does not merge with the Luni; instead, it flows southwards into the Gulf of Khambhat in the Arabian Sea. It originates in Madhya Pradesh and enters Rajasthan at Banswara, forming a major river system in the southern part of the state. The Luni is an entirely separate system located in the western desert region with no hydrological connection.

35. (3) Eru
The Som, Jakham, and Moran are well-known tributaries of the Mahi River, contributing to the southern drainage system. However, the Eru River is not part of this basin. Identifying the correct tributaries is essential for understanding the catchment boundaries and water distribution of the Mahi system, which is vital for the agricultural life of the Banswara and Dungarpur districts.

36. (4) Kotra, Udaipur
The Sabarmati River originates in the Aravalli Hills of the Kotra tehsil in Udaipur district, Rajasthan. While its source is in Rajasthan, only a small portion of its total length flows within the state. The majority of its course and its extensive catchment area are located in Gujarat, where it becomes one of the most important rivers of western India.

37. (3) A-ii, B-iii, C-iv, D-i
The Sabarmati's tributaries in Rajasthan have unique geographical features. The Wakal originates in Udaipur and is joined by the Mansi. The Sei is famous for the water tunnel constructed to divert its flow into the Jawai Dam. The Hathmati rises near the Gujarat border, and the Vatrak begins its journey in Dungarpur. These

ANSWERS

1. (2) Internal drainage system
The internal drainage system is the most extensive in Rajasthan, covering approximately sixty percent of the state's total area. This dominance is primarily due to the vast arid and semi-arid regions where rivers do not reach the sea. Instead, they disappear into the desert sands or flow into inland lakes, defining the unique hydrological landscape of the western desert.

2. (1) The Aravalli mountain range acts as the primary water divide between the Bay of Bengal and Arabian Sea drainage systems.
The Aravalli Range serves as a significant topographical barrier and water divide in Rajasthan. It splits the drainage system into two major parts: the Arabian Sea drainage and the Bay of Bengal drainage. Rivers originating from the eastern slopes eventually join the Yamuna or Ganges, while western-slope rivers flow toward the desert or the Arabian Sea.

3. (4) I, II and III
Rajasthan's internal drainage system characterizes the majority of the state's hydrological profile, covering nearly sixty percent of its land. These seasonal rivers, including the Kantli, Kakni, and Ghaggar, lack enough volume to reach oceanic bodies. They terminate within the desert terrain or seasonal lakes, making them distinct components of the unique geographical and climatic conditions found in northern India.

4. (4) A-ii, B-iii, C-i, D-iv
Different rivers in Rajasthan originate from specific hilly terrains across the state. The Luni originates from Nag Pahar in Ajmer, while the Banas starts at Khamnor Hills in Rajsamand. The Kantli river arises from the Khandela Hills in Neem Ka Thana, and the Banganga begins its journey in the Bairath Hills of Jaipur Gramin, highlighting regional hydrological diversity within the Aravalli range.

5. (3) The internal drainage system is completely absent in the arid regions of western Rajasthan.
Contrary to common misconceptions, the internal drainage system is most prominent in the arid regions of western Rajasthan. High evaporation, low rainfall, and sandy soil prevent many rivers from reaching the sea. Rivers like the Ghaggar and Kakni are classic examples of this system, where water courses naturally terminate within the desert boundaries rather than reaching any external ocean.

6. (2) Khamnor Hills
The Banas River, known as the 'Hope of the Forest', originates from the Khamnor Hills of the Aravalli Range in Rajsamand district. It is the longest river flowing entirely within the geographical boundaries of Rajasthan. This river is a major tributary of the Chambal, playing a vital role in the irrigation, ecology, and water security of the state.

7. (3) IV only
The Morel River originates from the hills of Jaipur Gramin, not Udaipur, and serves as a left-bank tributary of the Banas. Other tributaries like the Berach, Kothari, and Khari have their origins correctly identified in Udaipur and Rajsamand. Understanding the precise geographical source and orientation of these tributaries is essential for mapping the extensive Banas river basin correctly across Rajasthan.

8. (3) A is true but R is false.
The Banas River is traditionally called 'Van ki Asha', reflecting its historical and cultural significance in Rajasthan. However, it is not a perennial river and often dries up during the summer months, unlike the Chambal. Most of its flow is dependent on monsoon rains, making it a seasonal watercourse that provides critical resources to the surrounding forest ecosystems and plains.

9. (1) II, I, III
The Banas River forms several significant confluences along its course. It first meets the

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62. Match List-I (Freshwater Lake) with List-II (District) and select the correct answer using the codes given below:
List-I: (Freshwater Lake)
A. Rajsamand
B. Jaisamand
C. Fateh Sagar
D. Nakki
List-II: (District)
i. Sirohi
ii. Udaipur
iii. Salumbar
iv. Rajsamand
(1) A-i, B-ii, C-iii, D-iv
(2) A-iv, B-ii, C-iii, D-i
(3) A-iii, B-iv, C-i, D-ii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

63. The famous 'Nau Chowki Pal', adorned with 25 marble slabs containing the 'Raj Prashasti' (the longest stone inscription in India), is located on the banks of which lake?
(1) Rajsamand
(2) Pichola
(3) Jaisamand
(4) Ana Sagar
(5) Question not attempted

64. Consider the following statements regarding Jaisamand Lake:
I. It is one of the largest artificial freshwater lakes in India.
II. It houses seven islands inhabited primarily by the Bhil and Meena tribes.
III. The largest island on this lake is known as 'Baba ka Bhagra' and the smallest is 'Piari'.
Which of the above statements is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

65. Identify the incorrect statement regarding the freshwater lakes of the Udaipur region.
(1) Fateh Sagar Lake was initially built by Maharana Jai Singh but was later reconstructed by Maharana Fateh Singh.
(2) The Udaipur Solar Observatory is located on an island in Jaisamand Lake.
(3) The Saheliyon Ki Bari is situated near the banks of Fateh Sagar Lake.
(4) A canal links Fateh Sagar Lake to Pichola Lake to maintain water levels.
(5) Question not attempted

66. The historic Pichola Lake in Udaipur was originally constructed during the reign of which of the following Mewar rulers by a Banjara (gypsy)?
(1) Maharana Lakha
(2) Maharana Pratap
(3) Maharana Kumbha
(4) Maharana Sanga
(5) Question not attempted

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67. Which of the following seasonal streams directly feed water into the Pichola Lake?
(1) Ahar and Ayad
(2) Gomti and Jhamri
(3) Sisarma and Bujhra
(4) Wakal and Mansi
(5) Question not attempted

68. Consider the following landmarks and features associated with Pichola Lake:
I. Jag Mandir
II. Jag Niwas (Lake Palace)
III. Natani ka Chabutra
IV. Udaipur Solar Observatory
Which of the above statements correctly lists the features located in or immediately associated with Pichola Lake?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

69. Ana Sagar Lake, an artificial lake situated in Ajmer, was constructed by which of the following rulers?
(1) Prithviraj Chauhan III
(2) Vasudev Chauhan
(3) Arnoraja
(4) Vigraharaja IV
(5) Question not attempted

70. Identify the correct pair regarding the historical additions made to the surroundings of the Ana Sagar Lake.

particularly in the desert reaches, altering the river's potability and making it a distinctive hydrological phenomenon.

19. (3) It joins the Luni from the right bank without originating in the Aravallis.
The Jojari River is unique among the Luni's tributaries because it is the only one that originates from the plains near Nagaur rather than the Aravalli Hills. Furthermore, it is the only major tributary to join the Luni from the right bank. This distinction makes it an important geographical exception within the hydrological structure of the western Rajasthan drainage system.

20. (1) Guhiya, Bandi, Sukri, Jawai
The Luni River receives various tributaries as it flows from the Aravallis towards the southwest. Arranged from north to south based on their confluence points, the sequence begins with the Guhiya, followed by the Bandi and then the Sukri. The Jawai River joins further south. This spatial arrangement reflects the drainage pattern of the western Aravalli slopes into the desert's artery.

21. (3) Shivalik Hills in Himachal Pradesh
The Ghaggar River, an important seasonal stream in northern Rajasthan, originates in the Shivalik Hills of Himachal Pradesh. It flows through Punjab and Haryana before entering the Hanumangarh district. Often associated with the ancient Saraswati River, it is the main river of Rajasthan's internal drainage system in the north, typically drying up in the sands near the international border.

22. (2) A-ii, B-i, C-iv, D-iii
The Ghaggar River is known by different names across various regions and historical contexts. In the Hanumangarh district of Rajasthan, its flood plain is locally called 'Nali'. Across the border in Pakistan, it is referred to as 'Hakra'. In Haryana, it is sometimes known as 'Sotar', while its ancient Vedic name is 'Drishadvati', reflecting its long-standing cultural and geographical significance.

23. (4) It ultimately drains into the Arabian Sea near the Gulf of Kutch.
The Ghaggar is a classic example of an internal drainage river and does not reach any ocean or sea. It typically terminates in the sands of the Thar Desert. While it enters Rajasthan through Hanumangarh and its waters can occasionally reach Pakistan during heavy floods, it never flows to the Arabian Sea. This characteristic distinguishes it from the state's external systems.

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24. (2) III only
The Ghaggar River originates in the Shivalik Hills of Himachal Pradesh, not the Aravalli Range. It is indeed locally known as the 'Dead River' due to its seasonal and often dry nature. The historic site of Kalibangan, a major center of the Indus Valley Civilization, is located on its banks, highlighting the river's importance in providing water to ancient settlements.

25. (3) Nali
The flat, fertile flood plain of the Ghaggar River in the northern districts of Hanumangarh and Sriganganagar is locally referred to as 'Nali'. This region is agriculturally productive due to the silt deposited by the river during occasional flows. Understanding such local terminology is essential for studying regional geography and the specific impact of seasonal watercourses on the northern desert landscape.

26. (1) Bairath Hills
The Banganga River originates from the Bairath Hills in the Jaipur Gramin district of Rajasthan. Historically linked to the Mahabharata, it flows through Jaipur, Dausa, and Bharatpur. While it was once a tributary of the Yamuna, it now often disappears in the plains of Bharatpur before reaching its destination, thus being reclassified as a river belonging to the internal drainage system.

27. (4) It fails to reach the Yamuna and spreads into the Bharatpur plains.
The Banganga is termed a 'Beheaded River' or 'Rindhit Nadi' because its lower course has effectively been cut off from its original destination. Previously, it joined the Yamuna River in Uttar Pradesh. However, due to reduced water flow and siltation, it now terminates within the plains of Bharatpur. This shift from an open to an internal drainage pattern is a notable change.

28. (4) I, II, III and IV
The Gambhir River originates in Karauli and passes through several eastern districts before

47. (1) Both A and R are true and R is the correct explanation of A.
Rajasthan has the largest proportion of internal drainage in India, covering about sixty percent of its land. This is directly caused by the state's unique geography, including the arid Thar Desert and the Aravalli range's rain-shadow effect. Low rainfall and porous sandy soils prevent many rivers from reaching the sea, forcing them to disappear into the desert or inland lakes.

48. (4) I, II and III
The internal drainage system of Rajasthan includes several distinct rivers with specific origins and basin names. The Sabi starts in the Sewar Hills, while the Ruparel originates from the Udaynath Hills in Alwar. The Kantli River is notable for flowing through the Shekhawati region, where its catchment area is traditionally known as Torawati, illustrating the integration of local geography and terminology.

49. (2) It fills a local depression to form the Bhuj Lake in Jaisalmer.
The Kakni is a seasonal and ephemeral river in the heart of the Thar Desert. While it usually carries very little water, during years of substantial monsoon rainfall, its flow is sufficient to reach a local depression near Jaisalmer. This results in the formation of Bhuj Lake, a temporary body of water that is a significant geographical feature in the arid landscape.

50. (1) Varah and Laswari
The Ruparel River, which originates in the Alwar district, is locally known by the alternative names 'Varah' and 'Laswari'. It is an important part of the internal drainage system of eastern Rajasthan, flowing through Alwar and Bharatpur. These names are deeply rooted in the local culture and historical accounts of the region, reflecting the river's historical importance to surrounding communities.

51. (3) Natural crater/caldera lake
Pushkar Lake is geographically classified as a natural caldera or crater lake, believed to have been formed by volcanic activity or a meteorite impact. Located in the Ajmer district, it is surrounded by the Aravalli hills and holds immense spiritual significance. This origin distinguishes it from many other lakes in Rajasthan, which are either man-made reservoirs or tectonic depressions within the desert.

52. (4) I, II, III and IV
Pushkar Lake is a major cultural and religious hub, famous for its 52 ghats and the unique Brahma temple. The tradition of Deepdaan during the Kartik Purnima fair is a key highlight. To maintain its ecological health, a desilting project was historically supported by Canada. These features combine to make Pushkar one of the most important pilgrimage and environmental sites in Rajasthan.

53. (3) Maharaja Vinay Singh
Siliserh Lake, located in the Alwar district, was constructed in 1845 by Maharaja Vinay Singh. He built the lake and a beautiful palace for his queen, Shila. Often referred to as the 'Nandan Kanan' of Rajasthan due to its picturesque surroundings and lush greenery, the lake now serves as a popular tourist destination and a vital source of water for the area.

54. (2) Siliserh Lake is an important natural saltwater lake situated in the Alwar district.
Siliserh Lake is a freshwater lake, not a saltwater one, and it was artificially constructed by Maharaja Vinay Singh in Alwar. While Rajasthan is famous for several natural salt lakes like Sambhar, Siliserh is valued for its scenic beauty and fresh water. Understanding the distinction between these types of lakes is essential for a correct geographical assessment of the state's water bodies.

55. (4) Feeder streams are diverted and groundwater is extracted in the catchment.
The decline in water levels at Pushkar Lake is primarily due to human interference in its natural catchment area. Many feeder streams that once supplied water have been diverted or blocked by construction and sand mining. Furthermore, extensive groundwater extraction for agriculture and domestic use in the surrounding region has lowered the water table, reducing the natural inflow and the lake's retention capacity.

56. (2) 8.7%
Sambhar Lake is India's largest inland salt lake and a critical site for salt production. It contributes approximately 8.7% of the total salt produced

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streams collectively drain the southern Aravalli slopes.

38. (1) I, II and III only
The Sabarmati River is a vital water source for Gujarat, flowing past Ahmedabad and Gandhinagar, although its origin lies in Rajasthan. Engineering projects like the Mansi-Wakal tunnel highlight interstate efforts to manage its water. Crucially, the river discharges into the Gulf of Khambhat, not the Gulf of Kutch, a common point of confusion in regional geography when discussing western rivers.

39. (4) The Wakal, Hathmati, Meshwa, and Vatrak are significant left and right bank tributaries.
The Sabarmati River is fed by several important tributaries in southern Rajasthan, including the Wakal, Hathmati, Meshwa, and Vatrak. These rivers flow through districts like Udaipur and Dungarpur before crossing into Gujarat. They drain the rugged terrain of the southern Aravallis, providing the initial water volume for the Sabarmati, which subsequently becomes a major river serving the neighboring state.

40. (1) I, II, III, IV
When considering river lengths entirely within Rajasthan, the Banas is the longest, followed by the Luni. The internal drainage rivers are generally shorter; the Kantli is a significant seasonal river in the Shekhawati region, while the Kakni is the smallest river of this category, flowing for only a short distance in Jaisalmer. This sequence accurately reflects the varying regional river scales.

41. (3) Jhalawar
The Kali Sindh River, which originates in the Vindhya Range of Madhya Pradesh, enters Rajasthan at the Jhalawar district. It is a major tributary of the Chambal River and flows through the southeastern part of the state. Its entry point is crucial for the hydrological management of the Hadoti region, where it supports significant irrigation networks and the local economy.

42. (1) Ahu and Kali Sindh - Gagron Fort
The Gagron Fort, a world-renowned water fort, is uniquely situated at the confluence of the Ahu and Kali Sindh rivers in the Jhalawar district. This strategic location provided natural protection and made it an impregnable fortress historically. The convergence of these two rivers forms a scenic and formidable landscape that is a prime example of Rajasthan's integrated military and geographical heritage.

43. (4) I, II, III, IV and V
The Parvati River is an important tributary of the Chambal, originating in the Sehore district of Madhya Pradesh and entering Rajasthan at Baran. It marks a portion of the state boundary and eventually joins the Chambal in Sawai Madhopur. With tributaries like the Lhasi and Berni, the Parvati system provides vital water resources for irrigation across the fertile southeastern plains.

44. (2) A-ii, B-iv, C-iii, D-i
The drainage network of eastern Rajasthan is composed of several hierarchical river systems. The Parwan and Ahu are key tributaries of the Kali Sindh. The Lhasi contributes its waters to the Parvati River, while the Mej is a direct tributary of the Chambal. Understanding these relationships is fundamental to mapping the broader water flow through the Hadoti and southeastern regions.

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45. (3) The Kali Sindh river remains entirely within Rajasthan before its confluence.
Contrary to being entirely within the state, the Kali Sindh originates in the Bagli Hills of Madhya Pradesh and flows northwards into Rajasthan. It only joins the Chambal after traversing through Jhalawar and Kota districts. This interstate nature is common among the major rivers of southeastern Rajasthan, as they descend from the Malwa Plateau before entering the plains of the state.

46. (4) Kotari village, Jaisalmer
The Kakni River, also known as the Kakneya or Musurdi, is the smallest river in Rajasthan's internal drainage system. It originates from the Kotari village in Jaisalmer district. Due to its very low water volume and the arid desert climate, it flows for only a few kilometers before terminating. During rare periods of good rainfall, its waters reach the nearby Bhuj Lake.

Berach and Menal rivers at Bigod in Bhilwara. Continuing downstream, it joins the Khari and Dai rivers at Rajmahal in Tonk. Finally, the Banas merges with the Chambal and Seep rivers at Rameshwaram Ghat in Sawai Madhopur, completing its journey across the eastern plains of Rajasthan.

10. (1) Parwan
The Parwan River is a major tributary of the Kali Sindh, which in turn flows into the Chambal River. In contrast, the Dai, Mashi, and Kalisil are direct or indirect tributaries that belong to the Banas river basin. Distinguishing between these sub-basins is vital for understanding the complex drainage hierarchy within the larger Bay of Bengal system in eastern Rajasthan.

11. (4) Janapav Hills in Madhya Pradesh
The Chambal River originates from the Janapav Hills of the Vindhyan Range in the Mhow region of Madhya Pradesh. It is the only perennial river in Rajasthan and flows northward into the state. Known for its deep gorges and ravines, it plays a crucial role in hydroelectric power generation and provides water for irrigation projects in the neighboring states.

12. (4) I, II, III, IV and V
The Chambal River project is a multi-purpose venture involving four major dams across Rajasthan and Madhya Pradesh. Gandhi Sagar, Rana Pratap Sagar, Jawahar Sagar, and the Kota Barrage facilitate power generation and irrigation. The river also serves as a long natural border between these states, and its perennial nature sustains a unique ecosystem characterized by ravines and diverse riverine wildlife.

13. (3) Intense gully erosion caused by the fast-flowing river.
The formation of 'Utkhat Bhumi' or badland topography in the Chambal basin is primarily the result of severe gully erosion. The river's powerful flow across the soft alluvial soil creates deep, narrow channels and ravines. This unique landscape, dominated by rugged ridges and valleys, is unsuitable for agriculture but has significant ecological importance in eastern Rajasthan's geography and historical lore.

14. (4) A-ii, B-i, C-iv, D-iii
The Chambal River system is fed by numerous tributaries with diverse origins. The Kali Sindh begins at Bagli Hills, while the Parvati originates in the Sehore region of Madhya Pradesh. Within Rajasthan, the Banas rises from the Khamnor Hills and the Brahmani starts near Bhensrorgarh. These rivers collectively form an extensive drainage network that supports the semi-arid eastern plains.

15. (1) The Chambal river forms the famous Chuliya waterfall near Bhensrorgarh.
Near Bhensrorgarh in Chittorgarh district, the Chambal River drops significantly to form the Chuliya waterfall, which is a prominent geographical feature. The river enters Rajasthan at Chaurasigarh and generally flows in a northeasterly direction. It is a major component of the Yamuna drainage basin, eventually contributing its water to the Ganges and then reaching the distant Bay of Bengal.

16. (2) Nag Pahar
The Luni River originates from the Nag Pahar in the Ajmer district of the Aravalli Range. It is the primary river system of the Thar Desert in western Rajasthan. Initially known as the Sagarmati, it takes the name Luni after meeting the Saraswati stream. Its flow is ephemeral, and it plays a critical role in the desert ecosystem's hydrology.

17. (2) Luni
The Jawai, Sukri, and Bandi are all significant tributaries of the Luni River, flowing through the semi-arid regions of western Rajasthan. These seasonal streams originate mostly from the western slopes of the Aravalli Range. They contribute to the Luni's flow before it eventually disappears into the Rann of Kutch, forming an essential part of the state's western internal drainage network.

18. (1) Both A and R are true and R is the correct explanation of A.
The Luni River exhibits a unique chemical characteristic where its water remains fresh from its source until it reaches Balotra. Beyond this point, it turns saline because the riverbed passes through soil rich in salt and alkaline minerals. These particles dissolve into the water,

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in the country. This large-scale extraction is managed by Hindustan Salts Limited and other agencies. The lake's unique saline chemistry and vast size make it a major economic asset and a distinctive geographical feature of central Rajasthan.

57. (1) Pachpadra, Lunkaransar, Sambhar, Siliserh
Arranging Rajasthan's lakes from west to east requires tracking their district locations. Pachpadra is in the far west (Barmer), followed by Lunkaransar in the northwest (Bikaner). Moving east, we find Sambhar Lake near the center (Jaipur boundary). Finally, Siliserh Lake is located in the eastern district of Alwar, completing the longitudinal sequence across the state's diverse and vast geographical landscape.

58. (4) I, II, III, IV and V
Sambhar Lake is a complex saline ecosystem fed by several rivers like the Mendha and Rupangarh. It is a designated Ramsar site, reflecting its international ecological importance. Managed by Hindustan Salts Limited, it is also historically significant; the Bijolia inscription attributes its construction to Vasudev Chauhan. These factors highlight the lake's multifaceted role in the state's economy, history, and environment.

59. (4) Tal Chhapar - Churu
Tal Chhapar is a small saline depression located in the Churu district, which is also famous for its Blackbuck sanctuary. While many of Rajasthan's prominent salt lakes like Sambhar and Didwana are in the central region, Tal Chhapar represents the saline features found in the northern desert area. Other mentioned lakes like Degana and Kuchaman are located in the Nagaur and Didwana-Kuchaman districts respectively.

60. (2) An outbreak of Avian Botulism
In recent years, Sambhar Lake witnessed a tragic ecological disaster involving the death of thousands of migratory birds. Scientific investigations confirmed that the primary cause was an outbreak of Avian Botulism, a serious neuromuscular illness caused by a toxin produced by the bacterium Clostridium botulinum. This event highlighted the vulnerability of the lake's ecosystem to changing environmental conditions and biological pathogens.

61. (3) Gomti
Jaisamand Lake, historically known as Dhebar Lake, was created in the 17th century by Maharana Jai Singh. It was formed by constructing a massive marble dam across the Gomti River. Located in the Udaipur region, it remains one of the largest artificial freshwater lakes in the world, serving as a vital source of water and a major attraction for tourists.

62. (4) A-iv, B-iii, C-ii, D-i
Rajasthan's freshwater lakes are distributed across several districts, each with its own history. Rajsamand Lake is in its namesake district, while Jaisamand is now part of the Salumbar district. Fateh Sagar is a jewel of Udaipur city, and Nakki Lake is uniquely located in the hill station of Mount Abu in Sirohi. These lakes are central to regional tourism and water management.

63. (1) Rajsamand
The Rajsamand Lake is famous for its 'Nau Chowki Pal', a beautiful embankment where 25 marble slabs are installed. These slabs contain the 'Raj Prashasti', which is considered the longest stone inscription in India, detailing the history of the Mewar dynasty. Constructed by Maharana Raj Singh, the lake and its artistic embankment represent a significant intersection of engineering and historical documentation.

64. (4) I, II and III
Jaisamand Lake is one of India's largest man-made freshwater reservoirs and is home to seven inhabited islands. These islands are populated by the local Bhil and Meena tribes, who maintain a traditional lifestyle. The largest of these islands is called 'Baba ka Bhagra', while the smallest is named 'Piari'. This unique social and geographical feature adds to the lake's immense cultural value.

65. (2) The Udaipur Solar Observatory is located on an island in Jaisamand Lake.
The Udaipur Solar Observatory is actually situated on an island within the Fateh Sagar Lake, not Jaisamand Lake. Fateh Sagar was originally built by Maharana Jai Singh and later reconstructed, featuring attractions like the Saheliyon Ki Bari nearby. It is also hydraulically linked to Pichola Lake via a canal. These interconnected water bodies are essential for the urban landscape of Udaipur city.

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66. (1) Maharana Lakha
Pichola Lake, one of the oldest and most beautiful lakes in Udaipur, was constructed in the 14th century during the reign of Maharana Lakha. Historical records suggest it was built by a Banjara to facilitate the movement of grain and trade. Over time, the Mewar rulers expanded and embellished the lake, making it a central feature of the Royal City's landscape.

67. (3) Sisarma and Bujhra
The Pichola Lake in Udaipur is primarily fed by two seasonal streams known as the Sisarma and Bujhra. These streams carry rainwater from the surrounding Aravalli hills into the lake basin. Ensuring the health of these feeder channels is vital for maintaining the lake's water levels, which in turn supports the city's tourism industry and the delicate ecological balance of the area.

68. (1) I, II and III only
Pichola Lake is renowned for its spectacular landmarks, including the Jag Mandir and Jag Niwas located on its islands. Another famous feature is the 'Natani ka Chabutra', built in memory of a tightrope walker. However, the Udaipur Solar Observatory is located in the nearby Fateh Sagar Lake. These sites collectively make Pichola a world-class destination for history and tourism in Rajasthan.

69. (3) Arnoraja
Ana Sagar Lake is a prominent artificial lake in Ajmer, constructed in the 12th century by the Chauhan ruler Arnoraja, the grandfather of Prithviraj Chauhan III. The lake was built by damming the Luni River's headwaters to provide a steady water supply and enhance the city's beauty. It remains a central landmark and a popular recreational spot for residents and tourists in Ajmer.

70. (2) Subhash Udyan (Daulat Bagh) was laid out by Jahangir, and the marble Baradari was built by Shah Jahan.
While Arnoraja constructed the Ana Sagar Lake, later Mughal emperors added significant structures to its banks. Jahangir laid out the beautiful Daulat Bagh to enjoy the lake's scenic views. Subsequently, Shah Jahan built five elegant marble pavilions known as the 'Baradari'. These additions blend Chauhan and Mughal architectural styles, making the lakefront a site of immense historical and cultural importance today.

71. (4) High nutrient levels from agricultural runoff and urban sewage.
Eutrophication in Rajasthan's freshwater lakes is primarily driven by the excessive influx of nutrients, particularly nitrogen and phosphorus. These nutrients often come from untreated urban sewage and agricultural runoff containing fertilizers. This enrichment leads to the rapid growth of algae, which eventually depletes dissolved oxygen levels. This process severely degrades water quality and threatens the survival of aquatic life in these ecosystems.

72. (4) I, II, III, IV and V
Several major lakes in Rajasthan, including Fateh Sagar, Pichola, Ana Sagar, Pushkar, and Nakki, have been included in the National Lake Conservation Plan. This central government initiative aims to restore the ecological health of urban and semi-urban lakes. Through projects like desilting and sewage treatment, the program seeks to improve water quality and preserve the biodiversity of these important regional sites.

73. (3) Formation of dense algal blooms that deplete dissolved oxygen.
An immediate and critical consequence of lake eutrophication is the formation of dense algal blooms on the water's surface. As these algae die and decompose, the process consumes vast amounts of dissolved oxygen. This depletion creates "dead zones" where fish and other aquatic organisms cannot survive. Consequently, the biodiversity of the lake drops sharply, and the water becomes unsuitable for use.

74. (1) A-i, B-ii, C-iii, D-iv
Rajasthan's wetlands and lakes have varying conservation statuses. Sambhar Lake and Keoladeo Ghana are both recognized Ramsar sites, designated in 1990 and 1981 respectively. Mansagar Lake in Jaipur is known for its restoration via a public-private partnership. Meanwhile, Ana Sagar in Ajmer faces typical challenges of urban lakes, such as siltation and encroachment. These classifications help prioritize national conservation efforts.

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75. (4) The National Lake Conservation Plan (NLCP) is funded entirely (100%) by the State Government of Rajasthan.
The National Lake Conservation Plan is a Centrally Sponsored Scheme, meaning it is not funded entirely by the state government. Funding is typically shared between the Central and State governments in a specific ratio. While the state implements the projects, financial support and policy guidelines come from the national level to ensure the systematic restoration and conservation of critical aquatic ecosystems.

76. (2) Bandi
The Bandi River, a tributary of the Luni, has become one of the most polluted rivers in Rajasthan due to industrial activity. In the city of Pali, hundreds of textile dyeing and printing units discharge untreated chemical effluents directly into the river. This has led to severe groundwater contamination and ecological degradation, making the river water toxic for agriculture and harmful environment.

77. (1) Both A and R are true and R is the correct explanation of A.
Many freshwater lakes in the Aravalli and southern regions of Rajasthan are indeed man-made rather than natural. Historically, local rulers constructed these reservoirs by damming seasonal streams to harvest and store rainwater. This practice was a strategic response to the state's semi-arid climate and erratic rainfall, ensuring a reliable supply of water for drinking and irrigation throughout the entire year.

78. (3) 2019
The Rajasthan State Wetland Authority was officially constituted in 2019. Its primary mandate is to implement and enforce the Wetland Rules within the state. This body is responsible for identifying, notifying, and protecting critical wetlands from encroachment and pollution. The establishment of this authority marked a significant step toward the institutionalized and systematic conservation of Rajasthan's diverse and fragile aquatic ecosystems.

79. (1) Setting up new industries or expanding existing ones.
Under the Wetland Rules, setting up new industries or expanding existing ones within a notified wetland's boundary is strictly prohibited. This rule aims to prevent chemical pollution and physical encroachment that could destroy the delicate aquatic habitat. Other activities like traditional fishing or scientific research are generally permitted or regulated, as they do not typically cause the same level of environmental harm.

80. (2) To holistically conserve and restore lakes and wetlands for improvement of water quality and biodiversity.
The National Plan for Conservation of Aquatic Eco-systems aims for the holistic conservation of lakes and wetlands. Its main objectives are to improve water quality, restore ecological health, and preserve biodiversity. By addressing issues like pollution, siltation, and catchment degradation, the plan seeks to ensure that these water bodies continue to provide essential ecosystem services while maintaining their natural environmental balance.

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28. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): Winter rainfall in northern Rajasthan is highly beneficial for wheat cultivation.
Reason (R): Western disturbances originate in the Mediterranean Sea and carry moisture eastward via subtropical westerly jet streams.
Select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

29. Which of the following is the most appropriate description of the 'Loo' winds experienced in Rajasthan?
(1) Moisture-laden winds blowing from the Arabian sea causing heavy pre-monsoon showers in the south.
(2) Cold and dry polar winds sweeping across the state during the peak winter month of December.
(3) Hot, dry, intense westerly winds blowing during the afternoon in early summer.
(4) Strong cyclonic winds originating from the Bay of Bengal during the retreating monsoon in autumn.
(5) Question not attempted

30. Consider the following statements about rainfall distribution in Rajasthan:
I. The state receives more than 90% of its annual rainfall from the Southwest Monsoon.
II. The average annual rainfall of Rajasthan is approximately 57.51 cm.
III. Rainfall systematically decreases from the southeast towards the northwest.
IV. The Aravalli range acts as a major climatic divide determining rainfall patterns.
V. The westernmost districts typically experience more than 40 rainy days a year.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) III and IV
(3) Only V
(4) II, IV and V
(5) Question not attempted

31. The climate of western Rajasthan exhibits a high degree of continentality. Which of the following best reflects this phenomenon practically?
(1) An extremely high annual and diurnal range of temperature.
(2) Very high relative humidity throughout the year.
(3) Frequent occurrences of tropical cyclones.
(4) Uniform distribution of rainfall across all months.
(5) Question not attempted

32. Identify the incorrectly matched pair regarding the climatic features of Rajasthan.
(1) Isohyet dividing Arid and Semi-arid zones - 25 cm
(2) Direction of retreating monsoon - Southwest to Northeast
(3) Principal climatic divide of Rajasthan - Aravalli Range
(4) Origin of Bay of Bengal branch moisture - Indian Ocean
(5) Question not attempted

33. Which of the following places in Rajasthan receives the highest average annual rainfall?
(1) Banswara
(2) Mount Abu
(3) Jhalawar
(4) Pratapgarh
(5) Question not attempted

34. Match List I (Average Days of Dust Storms/ Andhi) with List II (Associated District) and select the correct answer using the options below.
List I: (Average Days of Dust Storms/Andhi)
A. Approximately 27 days
B. Approximately 18 days
C. Approximately 3 to 5 days
D. Less than 3 days
List II: (Associated District)
i. Jhalawar
ii. Bikaner
iii. Sri Ganganagar
iv. Ajmer
(1) A-iii, B-ii, C-iv, D-i
(2) A-ii, B-iii, C-i, D-iv

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parallel to the Aravallis.
III. The Aravallis act as a significant barrier blocking the Bay of Bengal monsoon branch from reaching western Rajasthan.
Which of the above statement(s) is/are correct?
(1) I and II
(2) II and III
(3) I and III
(4) I, II and III
(5) Question not attempted

7. The winter rainfall in northern and western Rajasthan, known locally as 'Mawath', is primarily caused by which of the following atmospheric phenomena?
(1) Northeast Monsoon system
(2) Tropical Cyclones originating in the Arabian Sea
(3) Retreating phase of the Southwest Monsoon
(4) Western Disturbances from the Mediterranean Sea
(5) Question not attempted

8. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The Arabian Sea branch of the Southwest Monsoon yields very low rainfall in the western desert of Rajasthan.
Reason (R): The Aravalli mountain range is aligned almost parallel to the direction of these moisture-laden winds.
Select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. Which local term is used to describe the extremely hot and dry westerly winds that blow across Rajasthan during the summer months of May and June?
(1) Purvaiya
(2) Andhi
(3) Loo
(4) Dogda
(5) Question not attempted

10. Consider the following statements regarding the climatic classification and associated districts of Rajasthan:
I. The Arid climate region (0-20 cm rainfall) strictly includes Jaisalmer, northwestern Barmer, and western Bikaner.
II. The Semi-arid region (20-40 cm rainfall) covers districts like Jalore, Pali, Nagaur, and Sikar.
III. The Sub-humid region features an average annual rainfall between 40 to 60 cm.
IV. The Humid region covers districts like Bharatpur, Dholpur, and Sawai Madhopur.
V. The Very Humid region strictly features annual rainfall exceeding 150 cm on average across the state.
Which of the above statements are correct?
(1) I, II, III and IV
(2) I, III, IV and V
(3) II, III, IV and V
(4) I, II, III and V
(5) Question not attempted

11. If the Aravalli mountain range were hypothetically aligned from east to west instead of southwest to northeast, what would be the most likely impact on Rajasthan's climate?
(1) Eastern Rajasthan would become an arid desert region.
(2) Winter temperatures across the state would significantly increase.
(3) The Northeast monsoon would become the dominant source of rainfall.
(4) Western Rajasthan would receive heavy rainfall from the Arabian Sea branch.
(5) Question not attempted

12. Which of the following is not a major factor influencing the overall climate of Rajasthan?
(1) Proximity and distance from the sea
(2) Influence of the cold ocean currents in the Bay of Bengal
(3) Specific latitudinal location on the globe
(4) Orientation and height of the Aravalli range
(5) Question not attempted

13. Select the odd one out among the following local terms based on their association with atmospheric precipitation or wind patterns in Rajasthan.
(1) Loo

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(4) July
(5) Question not attempted

42. What is the primary cause of the extremely high diurnal range of temperature observed in the Thar Desert region of Rajasthan?
(1) Lack of clouds, low humidity, and low specific heat of dry sandy soil.
(2) Continuous flow of cold winds from the northern regions throughout the diurnal cycle.
(3) High rate of evapotranspiration from dense desert vegetation during the peak summer.
(4) Frequent occurrences of localized thunderstorms and dust storms at the end of the day.
(5) Question not attempted

43. The 50 cm isohyet line, which broadly divides Rajasthan into two distinct climatic halves, runs nearly parallel to which prominent geographical feature?
(1) The Luni River basin
(2) The Indira Gandhi Canal
(3) The International Border with Pakistan
(4) The Aravalli Mountain Range
(5) Question not attempted

44. Match List I (Climatic Region based on Rainfall) with List II (Average Annual Rainfall) and select the correct answer using the options below.
List I: (Climatic Region based on Rainfall)
A. Arid (Shushk)
B. Semi-arid (Ardh-shushk)
C. Sub-humid (Up-ardr)
D. Humid (Ardr)
List II: (Average Annual Rainfall)
i. 40 to 60 cm
ii. 20 to 40 cm
iii. 60 to 80 cm
iv. 0 to 20 cm
(1) A-iv, B-ii, C-i, D-iii
(2) A-iv, B-i, C-ii, D-iii
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-ii, C-iii, D-i
(5) Question not attempted

45. Which statement accurately describes the influence of Rajasthan's geographical location on its climate?
(1) Being situated far from large oceanic water bodies, it experiences a classic maritime climate.
(2) The state falls entirely within the equatorial low-pressure belt, leading to continuous rainfall year-round.
(3) Location away from the sea results in a continental climate with temperature extremes.
(4) Its proximity to the Himalayas completely blocks tropical heatwaves and dust storms during summer.
(5) Question not attempted

46. Consider the following crops grown in Rajasthan:
I. Wheat
II. Gram (Chickpea)
III. Mustard
Which of the above crop(s) significantly benefit from the 'Mawath' winter rainfall?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

47. Which of the following districts does NOT fall under Koeppen's 'Cwg' (Monsoon type with dry winter) climatic classification in Rajasthan?
(1) Bikaner
(2) Bharatpur
(3) Dholpur
(4) Sawai Madhopur
(5) Question not attempted

48. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): The geographical extent of drought-prone areas in Rajasthan encompasses a major portion of the state, particularly the west.
Reason (R): The highly erratic nature of the monsoon, combined with high temperatures and lack of perennial rivers, creates persistent water deficits.
Select the correct answer from the options given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.

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substantial agricultural benefits to western Rajasthan.
Statement II: The Northeast monsoon winds are continental in origin and carry very little moisture over Rajasthan.
Select the correct response from the options given below:
(1) Statement I is correct and Statement II is incorrect.
(2) Statement I is incorrect and Statement II is correct.
(3) Both statements are correct and Statement II explains Statement I.
(4) Both statements are correct but Statement II does not explain Statement I.
(5) Question not attempted

22. What is the immediate effect of an 'Andhi' (dust storm) on the local weather conditions during the summer in western Rajasthan?
(1) It significantly increases the local atmospheric temperature.
(2) It leads to a temporary drop in temperature accompanied by higher humidity or light drizzle.
(3) It completely removes moisture from the atmosphere preventing any subsequent rainfall.
(4) It triggers persistent cold wave conditions for several days.
(5) Question not attempted

23. Identify the correct statement regarding the entry of the Southwest Monsoon into Rajasthan.
(1) The monsoon typically enters Rajasthan through the western Jaisalmer district in early June.
(2) The Bay of Bengal branch usually enters the eastern state before the Arabian Sea branch.
(3) The monsoon advances across the state strictly from the northern to the southern border.
(4) Banswara is generally the first district to receive advancing Southwest Monsoon rainfall.
(5) Question not attempted

24. Match List I (Trewartha's Climatic Classification) with List II (Associated Region in Rajasthan) and select the correct answer using the options below.
List I: (Trewartha's Climatic Classification)
A. Aw
B. BSh
C. BWh
D. Caw
List II: (Associated Region in Rajasthan)
i. Extreme Western region
ii. Southeastern region
iii. Semi-arid transitional region
iv. Southern tropical region
(1) A-iv, B-iii, C-i, D-ii
(2) A-ii, B-i, C-iii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-i, B-iii, C-iv, D-ii
(5) Question not attempted

25. Which phenomenon is popularly referred to as 'Golden Drops' by the farmers of Rajasthan due to its immense benefit to the Rabi crops?
(1) Pre-monsoon showers in May
(2) Retreating monsoon rainfall in October
(3) Mawath rainfall in winter
(4) Question not attempted
(5) Question not attempted

26. Consider the following statements regarding the winter conditions in Rajasthan:
I. The mean January temperature generally decreases from the southern to the northern districts.
II. Cold waves during winter are primarily caused by cold winds descending from the Himalayan region.
III. Frost formation is completely unknown in the sandy plains of northwestern Rajasthan.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) Only II
(3) Only III
(4) I and III
(5) Question not attempted

27. All of the following districts are generally considered part of the core drought-prone arid region of western Rajasthan, EXCEPT:
(1) Barmer
(2) Jaisalmer
(3) Jodhpur
(4) Pratapgarh
(5) Question not attempted

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(2) Andhi
(3) Mawath
(4) Jhola
(5) Question not attempted

14. Match List I (Climatic Feature) with List II (Associated District/Place) and select the correct answer using the options below.
List I: (Climatic Feature)
A. Highest average annual rainfall district
B. Highest average annual temperature district
C. Lowest winter temperature place
D. Highest summer temperature place
List II: (Associated District/Place)
i. Churu
ii. Phalodi
iii. Mount Abu
iv. Jhalawar
(1) A-iv, B-i, C-iii, D-ii
(2) A-iv, B-ii, C-iii, D-i
(3) A-iii, B-i, C-iv, D-ii
(4) A-iii, B-ii, C-i, D-iv
(5) Question not attempted

15. In which of the following districts of Rajasthan is the frequency of 'Andhi' (dust storms) generally the highest during the summer season?
(1) Sri Ganganagar
(2) Jaisalmer
(3) Bikaner
(4) Barmer
(5) Question not attempted

16. Consider the following statements regarding the seasonal cycle in Rajasthan:
I. The summer season officially begins in March and continues until mid-June.
II. The period from mid-June to September constitutes the season of the retreating monsoon.
III. October and November represent the transition period of autumn.
IV. The winter season extends from December to February with cold wave conditions in January.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) Only II
(3) II and III
(4) III and IV
(5) Question not attempted

17. Which is the most appropriate reason for the high frequency of drought-prone areas in western Rajasthan?
(1) Excessive deforestation in the Thar desert ecosystem over the last several decades
(2) Erratic, highly variable, and sparse rainfall combined with high evapotranspiration
(3) The complete absence of perennial rivers and ground water aquifers in the region
(4) Extensive damming of major seasonal rivers flowing through the eastern plains
(5) Question not attempted

18. Identify the correctly matched pair regarding Thornthwaite's climatic classification of Rajasthan.
(1) DB'w - Semi-arid mixed climate
(2) EA'd - Sub-humid climate
(3) DA'w - Tropical dry climate
(4) CA'w - Arid extreme climate
(5) Question not attempted

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19. According to recent climate change studies in Rajasthan, which of the following trends has been primarily observed over the past few decades?
(1) Consistent and uniform decrease in average summer temperatures across the state
(2) Uniform increase in annual rainfall across all districts without any significant dry spells
(3) Increased occurrences of both extreme high temperatures and erratic intense rainfall events
(4) Complete disappearance of frost days in the Aravalli region due to global warming trends
(5) Question not attempted

20. Which of the following represents the correct sequence of average annual rainfall zones in Rajasthan moving strictly from West to East?
(1) 10-20 cm, 20-40 cm, 40-60 cm, 60-80 cm
(2) 20-40 cm, 10-20 cm, 60-80 cm, 40-60 cm
(3) 40-60 cm, 60-80 cm, 20-40 cm, 10-20 cm
(4) 10-20 cm, 40-60 cm, 20-40 cm, 80-100 cm
(5) Question not attempted

21. Consider the following statements regarding the Northeast monsoon in Rajasthan:
Statement I: The Northeast monsoon brings

(3) A-iii, B-i, C-ii, D-iv
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

35. Identify the odd one out concerning the districts included in Koeppen's 'BWhw' (Arid Hot Desert) climate region.
(1) Jaisalmer
(2) Bikaner
(3) Dungarpur
(4) Northwestern Barmer
(5) Question not attempted

36. Consider the following statements regarding the Southwest monsoon branches in Rajasthan:
I. The Arabian Sea branch brings heavier and more widespread rainfall to the eastern plains than the Bay of Bengal branch.
II. The Bay of Bengal branch enters Rajasthan from the east and southeast directions.
III. The Bay of Bengal branch loses much of its moisture in the Ganga plains before reaching Rajasthan.
IV. The Arabian Sea branch provides the major share of rainfall for the Mount Abu region.
Which of the above statement(s) is/are incorrect?
(1) Only I
(2) I and IV
(3) II and III
(4) I, III and IV
(5) Question not attempted

37. Which of the following statements concerning the withdrawal of the monsoon in Rajasthan is incorrect?
(1) The withdrawal process usually begins from the western parts of the state during late September.
(2) Rajasthan is among the first states in India where the Southwest monsoon starts retreating.
(3) Retreat is marked by clear skies and a drastic drop in daytime temperatures.
(4) By the middle of October, the monsoon completely withdraws from all districts of the state.
(5) Question not attempted

38. In the context of Rajasthan's climate, the term 'Purvaiya' (or Purvai) specifically refers to:
(1) Hot, dusty winds blowing from the western Thar desert towards the eastern plains.
(2) Moisture-laden winds associated with the Bay of Bengal monsoon branch.
(3) Cold winds entering the state from the northern Himalayas during the peak winter.
(4) Localized convective storms occurring specifically during the hot pre-monsoon season.
(5) Question not attempted

39. Consider the following statements regarding climate change impacts in Rajasthan:
Statement I: Recent meteorological data shows a distinct shift in rainfall patterns, with traditionally arid western districts like Barmer occasionally experiencing extreme flood events.
Statement II: Climate change has reduced the overall frequency of extreme weather events in the state.
Select the correct response from the options given below:
(1) Statement I is correct and Statement II is incorrect.
(2) Statement I is incorrect and Statement II is correct.
(3) Both statements are correct and Statement II explains Statement I.
(4) Both statements are correct but Statement II does not explain Statement I.
(5) Question not attempted

40. Arrange the following districts in ascending order based on their average annual rainfall (lowest to highest):
I. Jaisalmer
II. Jhalawar
III. Jodhpur
IV. Jaipur
Select the correct order using the options below:
(1) I, III, IV, II
(2) I, IV, III, II
(3) III, I, IV, II
(4) I, III, II, IV
(5) Question not attempted

41. In Rajasthan, which month statistically records the highest average temperatures across the majority of the plains and desert regions?
(1) April
(2) May
(3) June

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CHAPTER 19
Climate

1. Which of the following broad classifications most accurately describes the general climatic characteristics of Rajasthan as a whole?
(1) Humid and Sub-humid tropical
(2) Arid and Semi-arid continental
(3) Tropical monsoon with dry summer
(4) Mediterranean and Semi-arid
(5) Question not attempted

2. What is the primary meteorological effect of the extreme heating of the Thar Desert during the summer season in Rajasthan?
(1) It creates an intense low-pressure trough attracting the Southwest monsoon.
(2) It creates a high-pressure zone that repels moisture-laden monsoon winds toward the ocean.
(3) It reverses the global trade winds leading to heavy pre-monsoon showers across the region.
(4) It stabilizes the lower atmosphere preventing convective rainfall despite high temperatures.
(5) Question not attempted

3. Consider the following statements regarding the temperature patterns in Rajasthan:
Statement I: The western parts of Rajasthan experience a higher diurnal range of temperature compared to the eastern parts.
Statement II: The sandy soil of the Thar desert heats up rapidly during the day and cools down rapidly at night.
Select the correct response from the options given below:
(1) Statement I is correct and Statement II is incorrect.
(2) Statement I is incorrect and Statement II is correct.
(3) Both statements are correct and Statement II explains Statement I.
(4) Both statements are correct but Statement II does not explain Statement I.
(5) Question not attempted

4. Match List I (Koeppen's Climatic Region) with List II (Representative District) and select the correct answer using the options below.
List I: (Koeppen's Climatic Region)
A. BWhw
B. BShw
C. Cwg
D. Aw
List II: (Representative District)
i. Dungarpur
ii. Dausa
iii. Sikar
iv. Jaisalmer
(1) A-iv, B-iii, C-ii, D-i
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-ii, C-iii, D-i
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

5. Which of the following statements regarding the temperature zones of Rajasthan is incorrect?
(1) Churu frequently records the highest summer temperatures reaching extreme levels in the state.
(2) Mount Abu is considered the lowest temperature zone due to its high elevation during winter.
(3) Western Rajasthan winter temperatures never drop below freezing.
(4) Phalodi is known for extreme heat spikes during peak summer months due to geographic factors.
(5) Question not attempted

6. Consider the following statements regarding the rain shadow effect in Rajasthan:
I. The eastern slopes of the Aravallis fall in the rain shadow zone of the Arabian Sea monsoon branch.
II. The western desert region remains relatively dry because the Arabian Sea branch travels

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(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

49. Which of the following factors is the most critical in defining the exact boundary between the arid and semi-arid regions within western Rajasthan?
(1) The 10 cm isohyet line
(2) The 25 cm isohyet line
(3) The course of the Luni river
(4) The vegetation transition from dry deciduous to scrub
(5) Question not attempted

50. Consider the following statements regarding the impact of climate change on Rajasthan:
I. There is an observable delay in the onset and an earlier withdrawal of the Southwest monsoon.
II. Total annual rainfall has increased uniformly across all the arid western districts by 50%.
III. Heatwaves have become more frequent and severe during the summer months.
IV. Unseasonal rainfall and hailstorms have increased, posing risks to Rabi crops.
V. The number of intense, short-duration rainfall events has decreased dramatically.
Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) I, III and IV
(3) II, IV and V
(4) I, III, IV and V
(5) Question not attempted

51. In parts of western Rajasthan, actual precipitation may occasionally be moderate in certain years, yet the region continues to exhibit severe arid conditions. Which climatological concept best explains this discrepancy?
(1) Total absence of surface runoff due to dense forest cover.
(2) Continuous formation of ground frost during nights reversing the moisture gain.
(3) High potential evapotranspiration significantly exceeds actual precipitation.
(4) The rain shadow effect of the Himalayas blocking the moisture retention.
(5) Question not attempted

52. Identify the incorrectly matched pair regarding Thornthwaite's climatic zones and their corresponding characteristics in Rajasthan.
(1) CA'w - Characterized by maximum rainfall and Savanna-type vegetation.
(2) DA'w - Characterized by semi-arid conditions prevailing over central and southern parts.
(3) EA'd - Characterized by extremely arid conditions and drought-resistant thorny scrub.
(4) DB'w - Characterized by extremely high winter rainfall suitable for Kharif crops.
(5) Question not attempted

53. Consider the following statements regarding winter phenomena in Rajasthan:
Statement I: Frost formation is occasionally observed in the Aravalli region and northern districts of Rajasthan during intense cold waves in January.
Statement II: Nighttime temperatures dropping below the freezing point cause atmospheric moisture to sublimate onto surfaces.
Select the correct response from the options given below:
(1) Statement I is correct and Statement II is incorrect.
(2) Statement I is incorrect and Statement II is correct.
(3) Both statements are correct and Statement II explains Statement I.
(4) Both statements are correct but Statement II does not explain Statement I.
(5) Question not attempted

54. Match List I (Traditional Season) with List II (Standard Months) in the context of Rajasthan's climate and select the correct answer using the options below.
List I: (Traditional Season)
A. Grishma Ritu (Summer)
B. Varsha Ritu (Monsoon)
C. Sharad Ritu (Autumn/Retreating Monsoon)
D. Shishir/Hemant Ritu (Winter)
List II: (Standard Months)
i. Mid-June to September
ii. October to November
iii. December to February
iv. March to Mid-June
(1) A-iv, B-i, C-ii, D-iii

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37. (3) Retreat is marked by clear skies and a drastic drop in daytime temperatures.
During the withdrawal of the monsoon, the transition is actually marked by clear skies and a temporary rise in daytime temperatures, often referred to as "October Heat." While nights may become cooler, the daytime heat remains intense due to high humidity and clear sunlight. The significant drop in daytime temperatures only occurs later with the arrival of the winter season in November.

38. (2) Moisture-laden winds associated with the Bay of Bengal monsoon branch.
Purvaiya refers to the moisture-bearing winds that enter Rajasthan from the east and southeast. These winds are part of the Bay of Bengal branch of the southwest monsoon. They are responsible for bringing significant rainfall to the eastern and southeastern districts of the state. The name "Purvaiya" literally translates to "from the east," reflecting the direction from which these winds blow.

39. (1) Statement I is correct and Statement II is incorrect.
Meteorological data confirms that traditionally arid regions like Barmer have indeed experienced rare, extreme flood events due to erratic rainfall patterns. However, Statement II is incorrect because climate change is actually increasing the frequency and intensity of extreme weather events, such as heatwaves and flash floods, rather than reducing them. The state is facing more unpredictable and volatile weather conditions.

40. (1) I, III, IV, II
Rainfall in Rajasthan increases from the northwest towards the southeast. Jaisalmer, in the extreme west, has the lowest rainfall. Jodhpur, located in the semi-arid zone, receives slightly more. Jaipur, in the sub-humid eastern region, has a higher average, while Jhalawar in the southeast receives the highest amount. This sequence accurately reflects the state's geographical distribution of annual precipitation levels.

41. (2) May
In Rajasthan, May is statistically the hottest month of the year across most regions. During this time, the sun is positioned directly over the northern hemisphere, leading to intense solar radiation. The dry, sandy terrain of the Thar Desert heats up rapidly, and the prevalence of hot "Loo" winds further elevates temperatures, often reaching extremes before the monsoon onset in June.

42. (1) Lack of clouds, low humidity, and low specific heat of dry sandy soil.
The Thar Desert's extreme diurnal temperature range is caused by several factors. The dry, sandy soil has a low specific heat capacity, meaning it heats up very quickly during the day and cools down rapidly at night. Additionally, clear skies and low atmospheric humidity allow for maximum solar radiation intake during the day and unrestricted terrestrial radiation escape at night.

43. (4) The Aravalli Mountain Range
The 50 cm isohyet line, which represents areas receiving 500 millimeters of annual rainfall, runs nearly parallel to the Aravalli Mountain Range. This geographical feature acts as a major climatic divide in Rajasthan. Regions to the west of the Aravallis generally receive less than 50 cm of rain, while the eastern and southeastern regions typically receive more than this amount.

44. (1) A-iv, B-ii, C-i, D-iii
The arid region is defined by minimal rainfall, typically between 0 and 20 centimeters. The semi-arid region receives between 20 and 40 centimeters. The sub-humid region, located mostly along the Aravallis, gets 40 to 60 centimeters. Finally, the humid region in eastern Rajasthan receives 60 to 80 centimeters of rain annually. These categories help classify the state's diverse ecological and agricultural zones.

45. (3) Location away from the sea results in a continental climate with temperature extremes.
Rajasthan's inland location, far from the moderating effects of any ocean, gives it a characteristic continental climate. This results in significant seasonal and daily temperature fluctuations, with very hot summers and cold winters. The lack of nearby large water bodies means there is no maritime influence to stabilize temperatures, leading to the extreme weather conditions observed across most of the state's territory.

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63. Which of the following statements regarding the movement of the Bay of Bengal monsoon branch towards Rajasthan is incorrect?
(1) Its moisture content increases as it moves from eastern Rajasthan towards the western desert.
(2) It enters the state primarily from the eastern and southeastern borders.
(3) It provides substantial rainfall to the Hadoti plateau and eastern plains.
(4) It faces the eastern slopes of the Aravalli range, resulting in orographic rainfall.
(5) Question not attempted

64. Match List I (Isohyet Line) with List II (Climatic Boundary/Feature in Rajasthan) and select the correct answer using the options below.
List I: (Isohyet Line)
A. 10 cm Isohyet
B. 25 cm Isohyet
C. 40 cm Isohyet
D. 50 cm Isohyet
List II: (Climatic Boundary/Feature)
i. Roughly divides the state into two equal halves along the Aravallis.
ii. Generally marks the western limit of the semi-arid steppe region.
iii. Divides the arid desert into purely arid and semi-arid transitional zones.
iv. Represents extreme western parts of Jaisalmer border region.
(1) A-iv, B-iii, C-ii, D-i
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-ii, C-iii, D-i
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

65. The influence of Western Disturbances on Rajasthan's climate is seen in all of the following ways, EXCEPT:
(1) Generating light to moderate rainfall during the cool winter months of the year.
(2) Triggering intense tropical cyclones over the Thar desert in the month of June.
(3) Assisting in the healthy growth of winter (Rabi) crops such as wheat and mustard.
(4) Inducing cold wave conditions following their passage over the northern parts of the state.
(5) Question not attempted

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66. Consider the following phenomena regarding the temperature dynamics in Rajasthan:
I. Temperature inversions are common in western Rajasthan during clear, calm winter nights.
II. Extreme continentality prevents any variation between summer and winter temperatures.
III. The highest temperatures in the state are recorded in the southern tribal belt due to dense forests.
Which of the above statement(s) is/are incorrect?
(1) Only I
(2) II and III
(3) I and III
(4) I, II and III
(5) Question not attempted

67. Consider the following statements regarding the monsoon trough over Rajasthan:
Statement I: The shifting of the Inter-Tropical Convergence Zone (ITCZ) northward over the Thar desert creates a low-pressure trough, drawing in the monsoon winds.
Statement II: The strength and duration of the monsoon trough over Rajasthan directly dictate the intensity of rainfall received during the season.
Select the correct response from the options given below:
(1) Statement I is correct and Statement II is incorrect.
(2) Statement I is incorrect and Statement II is correct.
(3) Both statements are correct and Statement II explains Statement I.
(4) Both statements are correct but Statement II does not explain Statement I.
(5) Question not attempted

68. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R).
Assertion (A): Mount Abu experiences much lower summer temperatures compared to the surrounding plains of the Jalore and Sirohi districts.
Reason (R): Temperature decreases with an increase in altitude at a standard lapse rate.
Select the correct answer from the options given below:
(1) Both A and R are true and R is the correct

explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

69. Based on long-term climate data, during which period is the incidence of drought historically highest in the arid districts of western Rajasthan?
(1) It occurs almost continuously, with drought conditions recorded 9 out of 10 years.
(2) It is extremely rare, occurring once every 50 years.
(3) It occurs on average once every 2 to 3 years.
(4) It happens strictly in a 10-year cyclic pattern.
(5) Question not attempted

70. Consider the following statements regarding the general climatic regions of Rajasthan:
I. The Arid climate region covers approximately 20% of the state's total area.
II. The Semi-arid region is characterized by steppe-type vegetation and thorny bushes.
III. The Sub-humid region is largely concentrated along the Aravalli axis.
IV. The Humid region features a mix of deciduous trees and relatively stable agricultural conditions.
V. The Very Humid region in Rajasthan is extensive, covering the entire northern plains.
Which of the above statement(s) is/are incorrect?
(1) I and V
(2) II and III
(3) III and IV
(4) I, II and V
(5) Question not attempted

71. Bikaner district has no flowing rivers. From a climatological perspective, which combination of factors best explains this geographical reality?
(1) Intense rainfall events that instantly evaporate before they can form any stable drainage channels.
(2) Continuous freezing temperatures throughout the year locking all moisture in deep permafrost layers.
(3) Dense vegetation cover that absorbs all available surface runoff immediately after it rains.
(4) Lack of rain, porous sandy surfaces, and extreme potential evapotranspiration.
(5) Question not attempted

72. Identify the correctly paired climatic code of Koeppen with its descriptive meaning for Rajasthan.
(1) BWhw - Hot desert climate with dry winter
(2) BShw - Monsoon climate with short dry season
(3) Cwg - Tropical wet climate with no dry season
(4) Aw - Cold semi-arid climate
(5) Question not attempted

73. Which is the most appropriate reason why the southeastern part of Rajasthan (Hadoti region) receives significantly higher rainfall than the western part?
(1) It lies directly on the tropical equator, receiving daily convective rain throughout the summer season.
(2) It is the very first region to encounter the Arabian Sea branch without any significant barriers.
(3) Windward location relative to moisture-laden Bay of Bengal winds entering from the east.
(4) It is heavily forested with tropical trees, which physically blocks the dry and hot western winds.
(5) Question not attempted

74. Match List I (Local Weather Phenomenon) with List II (Primary Characteristic) and select the correct answer using the options below.
List I: (Local Weather Phenomenon)
A. Loo
B. Andhi
C. Mawath
D. Purvaiya
List II: (Primary Characteristic)
i. Winter rainfall from Mediterranean cyclonic disturbances
ii. Hot, dry, scorching summer winds
iii. Moisture-bearing winds from the east
iv. Violent, dust-raising summer storms lowering temperatures temporarily
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iv, D-iii

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(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

75. Select the odd one out concerning districts primarily influenced by the Arabian Sea branch of the Southwest monsoon.
(1) Banswara
(2) Dungarpur
(3) Sirohi (Mount Abu region)
(4) Hanumangarh
(5) Question not attempted

76. Consider the following statements regarding the factors influencing Rajasthan's climate:
I. The vast expanse of the Thar desert acts as a major heat source, fundamentally driving local wind circulations.
II. The absence of dense forest cover over large parts of the state exacerbates temperature extremes.
III. The latitudinal position of the state places it entirely outside the influence of the subtropical high-pressure belt.
IV. The presence of the Aravalli range enhances rainfall uniformly across both its eastern and western flanks.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) III and IV
(3) I, II and III
(4) II, III and IV
(5) Question not attempted

77. The general climatic classification divides the state of Rajasthan into how many distinct climatic regions based primarily on rainfall and temperature patterns?
(1) Three
(2) Four
(3) Five
(4) Seven
(5) Question not attempted

78. Which of the following is NOT a consequence of the 'Loo' in western Rajasthan?
(1) Rapid desiccation of surface soil moisture.
(2) Increased incidence of heatstroke among the population.
(3) Wilting of unprotected summer vegetation.
(4) Sudden onset of violent thunderstorms and heavy hail.
(5) Question not attempted

79. Identify the correct statement concerning the spatial distribution of 'Mawath' (winter rainfall) in Rajasthan.
(1) Intensity decreases from the northwest towards the south and southeast.
(2) Its intensity strictly increases from the southeast to the northwest parts of the state.
(3) It is uniformly distributed across all fifty districts currently present in the state.
(4) It is exclusively confined to the districts bordering the neighboring state of Gujarat.
(5) Question not attempted

80. Arrange the following major climatic regions of Rajasthan in the correct sequence moving generally from West to East:
I. Humid Region
II. Arid Region
III. Semi-arid Region
IV. Sub-humid Region
Select the correct sequence using the options below:
(1) II, III, IV, I
(2) II, IV, III, I
(3) III, II, I, IV
(4) I, IV, III, II
(5) Question not attempted

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ANSWERS

1. (2) Arid and Semi-arid continental
Rajasthan's climate is predominantly characterized by extreme temperatures and sparse rainfall. Large parts of the state fall under the arid and semi-arid categories due to its geographical location. The Thar Desert dictates these characteristics, leading to a continental climate with significant temperature variations between summer and winter seasons across the diverse topography of the region.

2. (1) It creates an intense low-pressure trough attracting the Southwest monsoon.
During the summer months, the intense heating of the sandy terrain in the Thar Desert creates a deep low-pressure zone. This meteorological phenomenon is crucial as it acts as a thermal engine, drawing moisture-laden winds from the high-pressure areas over the Indian Ocean. This pressure gradient facilitates the advancement of the southwest monsoon into northern India.

3. (3) Both statements are correct and Statement II explains Statement I.
Western Rajasthan experiences a higher diurnal temperature range primarily because of its sandy soil. Sand has a low specific heat capacity, causing it to heat up very rapidly under solar radiation during the day and lose heat quickly through radiation at night. This physical property of the desert surface leads to extreme fluctuations between daytime highs and nighttime lows.

4. (1) A-iv, B-iii, C-ii, D-i
Koeppen's classification identifies Jaisalmer as part of the arid BWhw region, while Sikar falls under the semi-arid BShw category. Dausa is situated in the sub-humid Cwg region, and Dungarpur belongs to the tropical Aw zone. These classifications reflect the distinct variations in precipitation and temperature patterns observed across the diverse geographical landscapes of the state of Rajasthan.

5. (3) Western Rajasthan winter temperatures never drop below freezing.
In reality, winter temperatures in the arid and semi-arid regions of western Rajasthan frequently dip below the freezing point. During intense cold waves, frost formation is a common phenomenon in districts like Churu and Bikaner. The sandy soil's rapid heat loss at night facilitates these sub-zero temperatures, contradicting the claim that they never fall below zero degrees Celsius.

6. (2) II and III
The western desert remains dry because the Arabian Sea monsoon branch travels parallel to the Aravalli Range, preventing moisture-laden winds from rising. Additionally, these mountains act as a significant physical barrier that blocks the Bay of Bengal branch from penetrating into the western parts. These combined factors lead to sparse rainfall and arid conditions in the western region.

7. (4) Western Disturbances from the Mediterranean Sea
Mawath refers to the light winter rainfall received primarily in the northern and western parts of the state. This precipitation is caused by shallow cyclonic depressions known as Western Disturbances. These systems originate over the Mediterranean Sea and are transported to the Indian subcontinent by the sub-tropical westerly jet stream, providing vital moisture during the winter months.

8. (1) Both A and R are true and R is the correct explanation of A.
The Arabian Sea branch of the southwest monsoon yields very low rainfall in the western desert region. This occurs because the Aravalli mountain range is aligned almost parallel to the direction of the incoming moisture-laden winds. Consequently, the mountains fail to provide the necessary orographic barrier required to force the winds to rise, cool, and precipitate effectively.

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9. (3) Loo
The term Loo describes the intense, hot, and dry westerly winds that sweep across the plains of northern and western India during May and June. In Rajasthan, these winds are a defining feature of the summer season. They originate from the desert regions and can cause severe dehydration and heatstroke due to their extremely high temperatures and low humidity.

10. (1) I, II, III and IV
Rajasthan is divided into several climatic zones based on annual rainfall. The arid region includes western districts like Jaisalmer with minimal rain. The semi-arid zone covers central districts like Nagaur, while sub-humid and humid zones receive progressively higher rainfall in the eastern and southeastern parts. However, the very humid region generally records 80 to 100 centimeters of rainfall annually.

11. (4) Western Rajasthan would receive heavy rainfall from the Arabian Sea branch.
If the Aravalli Range were aligned from east to west, it would act as a massive physical barrier to the Arabian Sea monsoon branch moving northward. This orientation would force the moisture-laden winds to rise and precipitate on the southern slopes, leading to heavy rainfall in western Rajasthan. This change would transform the desert landscape into a more humid region.

12. (2) Influence of the cold ocean currents in the Bay of Bengal
Rajasthan's climate is shaped by its continental location, distance from the sea, and the orientation of the Aravalli Range. However, the Bay of Bengal does not have significant cold ocean currents that influence the state's weather patterns. Instead, it serves as a source of moisture-laden monsoon winds that enter the state from the east and southeast during the summer.

13. (3) Mawath
Loo, Andhi, and Jhola are all atmospheric phenomena associated with the hot summer season or dry wind patterns in the region. In contrast, Mawath refers specifically to winter rainfall caused by Western Disturbances. This precipitation is a cool-season occurrence that is highly beneficial for Rabi crops, distinguishing it from the heat-related wind and storm patterns of the summer months.

14. (1) A-iv, B-i, C-iii, D-ii
Jhalawar receives the highest average annual rainfall among all districts, while Churu is noted for recording the highest average annual temperatures. Mount Abu, due to its high elevation, experiences the lowest winter temperatures in the state. Phalodi is recognized as the place that frequently records the highest extreme summer temperatures because of its geographical location in the desert.

15. (1) Sri Ganganagar
Sri Ganganagar district records the highest average number of dust storm days in Rajasthan annually, typically around twenty-seven days. These storms, locally called Andhi, occur most frequently during the peak summer months. They are triggered by intense convective activity and localized low-pressure systems over the dry, sandy terrain of northern Rajasthan, often providing a temporary reprieve from extreme heat.

16. (2) Only II
The period from mid-June to September is actually the season of the advancing southwest monsoon, not the retreating monsoon. The retreating phase typically occurs from October to November as the high-pressure system begins to establish itself over the region. This transition marks the end of the rainy season and leads into the cool, dry winter months across the state.

17. (2) Erratic, highly variable, and sparse rainfall combined with high evapotranspiration
Western Rajasthan faces frequent droughts due to its highly erratic and sparse rainfall patterns, which show significant inter-annual variability. Furthermore, the extremely high temperatures in the region lead to high potential evapotranspiration rates. This combination of low moisture input and high water loss ensures a persistent state of water deficit, making the region highly vulnerable to recurring drought conditions.

18. (1) DB'w - Semi-arid mixed climate
Thornthwaite's classification for Rajasthan identifies the DB'w zone as representing a semi-

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(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

55. Which prominent topographical feature in Rajasthan records the highest number of rainy days annually?
(1) Bhorat Plateau
(2) Hadoti Plateau
(3) Chappan Basin
(4) Mount Abu
(5) Question not attempted

56. Consider the following statements comparing 'Loo' and 'Andhi' in Rajasthan:
I. Loo is characterized by high-speed, moisture-laden winds, whereas Andhi is strictly a dry wind.
II. Andhi generally leads to a temporary decrease in the local temperature due to its convective nature.
III. Loo causes severe dehydration and heatstroke, peaking in intensity during May and June.
IV. The frequency of Andhi is highest in the southeastern districts like Jhalawar and Kota.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) III and IV
(3) I and IV
(4) II and III
(5) Question not attempted

57. Select the odd one out from the following districts based on their inclusion in the generally accepted "Humid" (Ardr) climatic region of Rajasthan.
(1) Bharatpur
(2) Dholpur
(3) Jaisalmer
(4) Sawai Madhopur
(5) Question not attempted

58. Which of the following statements correctly describes the relative humidity pattern in Rajasthan throughout the year?
(1) It reaches its maximum during the peak monsoon months of July and August.
(2) Relative humidity is consistently high across all seasons due to the presence of numerous inland lakes.
(3) It remains highest during the winter season across the western desert.
(4) It is lowest during the retreating monsoon season in October.
(5) Question not attempted

59. Statistically, which is the coldest month of the year across the state of Rajasthan?
(1) November
(2) December
(3) February
(4) January
(5) Question not attempted

60. Which of the following correctly describes the general direction of the advancement of the Bay of Bengal monsoon branch over Rajasthan?
(1) From Northwest to Southeast
(2) From Southeast to Northwest
(3) From Southwest to Northeast
(4) From North to South
(5) Question not attempted

61. How does the high surface albedo (reflectivity) of the sandy Thar Desert affect its local climate?
(1) It causes extreme absorption of solar radiation, completely preventing any form of nighttime cooling in the desert.
(2) It actively attracts monsoon clouds by ionizing the lower atmosphere through intense heat and light reflection.
(3) Reflection of solar radiation leads to rapid cooling at night, increasing the diurnal range.
(4) It traps greenhouse gases near the surface, leading to a localized warming effect that persists throughout the year.
(5) Question not attempted

62. According to standard definitions applied in Rajasthan, a situation where the actual rainfall in a region falls significantly below its long-term average, leading to surface water scarcity, is termed as:
(1) Agricultural Drought
(2) Hydrological Drought
(3) Socio-economic Drought
(4) Meteorological Drought
(5) Question not attempted

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the southern part of Rajasthan. This district falls within the humid to very humid climatic zone and receives significantly higher annual rainfall, making it fundamentally different from the core arid regions of the western state.

28. (1) Both A and R are true and R is the correct explanation of A.
Light winter rainfall in northern Rajasthan is highly beneficial for the cultivation of wheat and other Rabi crops. This precipitation is delivered by Western Disturbances, which are extra-tropical storms originating in the Mediterranean region. These systems are steered toward India by the sub-tropical westerly jet stream, providing essential moisture to the northern plains during the otherwise dry winter months.

29. (3) Hot, dry, intense westerly winds blowing during the afternoon in early summer.
Loo refers to the extremely hot and dry winds that blow from the west across the plains of northern India and Rajasthan. These winds typically peak in intensity during May and June. They are characterized by their high temperatures, often exceeding forty-five degrees Celsius, and can cause life-threatening conditions such as heatstroke and severe dehydration due to their desiccating nature.

30. (3) Only V
The statement that westernmost districts experience more than forty rainy days per year is incorrect. In reality, districts like Jaisalmer have very few rainy days, often averaging fewer than ten per year. While the state receives most of its rain from the Southwest monsoon and has a major divide in the Aravallis, the western desert is characterized by minimal rainy days.

31. (1) An extremely high annual and diurnal range of temperature.
Continentality refers to the climatic effect of being located far from the moderating influence of the sea. In western Rajasthan, this manifests as extreme temperature variations. The region experiences scorching summers and very cold winters, alongside a high diurnal range where daytime heat dissipates rapidly at night. This lack of marine influence leads to sharp contrasts in temperature throughout the year.

32. (2) Direction of retreating monsoon - Southwest to Northeast
The retreating monsoon actually moves from the Northeast to the Southwest as the high-pressure system builds over the land and winds begin to blow towards the sea. The other pairs are correct: the 25 cm isohyet divides the arid and semi-arid zones, the Aravalli Range is the principal divide, and moisture for the Bay of Bengal branch originates in the ocean.

33. (2) Mount Abu
Mount Abu, the highest point in the Aravalli Range, receives the highest average annual rainfall in Rajasthan, often exceeding 150 centimeters. This is due to its high altitude, which causes moisture-laden monsoon winds to rise and precipitate through orographic lifting. While Jhalawar is the wettest district overall, Mount Abu remains the specific location with the most significant precipitation in the state.

34. (1) A-iii, B-ii, C-iv, D-i
Sri Ganganagar experiences the highest frequency of dust storms, averaging about twenty-seven days annually. Bikaner follows with approximately eighteen days. In contrast, Ajmer in the central region has only three to five days of dust storms, and Jhalawar in the southeast records fewer than three days. This pattern shows a clear decrease in storm frequency from the northwest to the southeast.

35. (3) Dungarpur
Koeppen's BWhw code represents the hot desert climate, which covers the arid western districts like Jaisalmer, Bikaner, and parts of Barmer. Dungarpur, however, is located in the southern part of the state and belongs to the tropical Aw climate region. It receives much higher rainfall and has a different vegetation profile, making it the odd one out in this list.

36. (1) Only I
The statement that the Arabian Sea branch brings heavier rainfall to the eastern plains than the Bay of Bengal branch is incorrect. In reality, the Bay of Bengal branch is the primary source of significant rainfall for the eastern and southeastern parts of Rajasthan. The Arabian Sea branch mostly passes parallel to the Aravallis, providing less precipitation to the eastern plains.

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arid or steppe-type climate with a moisture deficit in all seasons. This region typically covers the northern parts of the state. Other codes include EA'd for the arid western desert and DA'w for the sub-humid to semi-arid tropical regions covering central and southeastern parts of the state.

19. (3) Increased occurrences of both extreme high temperatures and erratic intense rainfall events
Recent observations indicate that climate change is causing more frequent extreme weather events in Rajasthan. This includes a notable rise in peak summer temperatures and a shift towards erratic, high-intensity rainfall episodes. These intense bursts of rain often lead to localized flooding even in traditionally arid districts, while the intervals between rainfall events remain dry, complicating the state's water management.

20. (1) 10-20 cm, 20-40 cm, 40-60 cm, 60-80 cm
As one moves from the western border of Jaisalmer towards the eastern plains of Rajasthan, the average annual rainfall increases progressively. The extreme west receives minimal rain, under 20 centimeters. This amount rises across the semi-arid central plains to about 40-60 centimeters. Finally, the eastern and southeastern districts receive higher precipitation, typically ranging between 60 and 80 centimeters annually.

21. (2) Statement I is incorrect and Statement II is correct.
The Northeast monsoon originates over the continental landmass and travels towards the sea, making these winds dry and cold. Consequently, they carry very little moisture and do not provide substantial agricultural benefits to Rajasthan. The state's primary source of rainfall is the Southwest monsoon, while the light winter rains, known as Mawath, are caused by Western Disturbances instead.

22. (2) It leads to a temporary drop in temperature accompanied by higher humidity or light drizzle.
Dust storms, or Andhi, typically occur during the afternoons of the summer months. They are convective in nature and often lead to a sudden, temporary drop in local temperatures as they block solar radiation and may be accompanied by light drizzle or an increase in humidity. This provides a brief, welcome relief from the scorching heat and dry conditions.

23. (4) Banswara is generally the first district to receive advancing Southwest Monsoon rainfall.
The Southwest monsoon typically enters Rajasthan from the southern and southeastern parts. Banswara district, located at the southernmost tip, is generally the first to experience the arrival of the monsoon winds, usually by the middle of June. From there, the monsoon gradually advances towards the northwest, although its intensity and reliability decrease as it moves further into the desert.

24. (1) A-iv, B-iii, C-i, D-ii
Trewartha's climatic classification maps the Aw code to the southern tropical regions, while BSh represents the semi-arid transitional steppe. The BWh code is assigned to the extreme western desert, characterized by high temperatures and minimal rain. Finally, the Caw classification corresponds to the southeastern region, reflecting its sub-humid characteristics and seasonal variations in precipitation and temperature patterns.

25. (3) Mawath rainfall in winter
Mawath refers to the rainfall received during the winter season, which is caused by Western Disturbances originating from the Mediterranean region. Farmers in Rajasthan consider these raindrops "golden" because they are exceptionally beneficial for Rabi crops, especially wheat, mustard, and gram. This timely moisture during the growing phase significantly enhances crop yields and the overall agricultural productivity of the region.

26. (3) Only III
The claim that frost is unknown in the sandy plains of northwestern Rajasthan is incorrect. In fact, these regions frequently experience frost during the peak of winter when temperatures drop below freezing. The rapid cooling of the sandy soil under clear skies at night facilitates the formation of frost, which can significantly impact local vegetation and agricultural practices in those areas.

27. (4) Pratapgarh
Barmer, Jaisalmer, and Jodhpur are central districts within the arid Thar Desert, characterized by sparse rainfall and frequent droughts. In contrast, Pratapgarh is located in

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46. (4) I, II and III
Mawath, the winter rainfall caused by Western Disturbances, is highly beneficial for all major Rabi crops in Rajasthan. Wheat, gram (chickpea), and mustard all require some moisture during their growing period in the cool season. This precipitation helps in better grain formation and increases the overall yield, making it an essential meteorological event for the agricultural economy of northern India.

47. (1) Bikaner
Koeppen's Cwg classification describes a monsoon climate with a dry winter, which is typical for the eastern and northeastern parts of Rajasthan, including Bharatpur, Dholpur, and Sawai Madhopur. Bikaner, however, is located in the northern part of the arid western desert. It falls under the BWhw (hot desert) or BShw (semi-arid) categories, characterized by much lower rainfall and higher aridity.

48. (1) Both A and R are true and R is the correct explanation of A.
A major portion of Rajasthan, particularly the west, is classified as drought-prone. This geographic reality is driven by the highly erratic and sparse nature of the monsoon rains. High temperatures further increase evaporation, while the absence of perennial rivers in the desert regions makes it difficult to maintain water security. These combined factors lead to persistent and recurring water deficits across the state.

49. (2) The 25 cm isohyet line
Climatologically, the 25 cm isohyet line serves as the critical boundary between the purely arid desert (Marusthali) and the semi-arid transitional steppe region in western Rajasthan. Areas receiving less than 25 centimeters of annual rainfall are considered arid, while those receiving between 25 and 50 centimeters fall into the semi-arid category. This line marks a significant change in vegetation and land use.

50. (2) I, III and IV
Climate change in Rajasthan is evident through shifts in the monsoon cycle, with frequent delays in onset and earlier withdrawals. Additionally, heatwaves are becoming more severe during summers, and there is an increase in unseasonal rainfall and hailstorms that threaten Rabi crops. However, the claim that total annual rainfall has increased uniformly by 50% across all western districts is scientifically inaccurate.

51. (3) High potential evapotranspiration significantly exceeds actual precipitation.
Aridity is not just a function of low rainfall but also of high water loss. In western Rajasthan, the potential evapotranspiration—the amount of water that would evaporate and transpire if moisture were available—is extremely high due to intense solar radiation and high temperatures. Because this potential loss far exceeds the actual precipitation received, the region remains fundamentally arid even in moderate years.

52. (4) DB'w - Characterized by extremely high winter rainfall suitable for Kharif crops.
This pairing is incorrect because the DB'w zone, representing the semi-arid northern parts of Rajasthan, is not characterized by "extremely high" winter rainfall. Furthermore, Kharif crops are grown during the monsoon season, not based on winter rains. Thornthwaite's DB'w actually indicates a region with a moisture deficit throughout the year and only light, sporadic rainfall, primarily during the winter and monsoon periods.

53. (3) Both statements are correct and Statement II explains Statement I.
Frost formation is indeed observed in several parts of Rajasthan during peak winter, especially in the northern districts and the elevated Aravalli region. This occurs because nighttime temperatures can drop below the freezing point during intense cold waves. When this happens, the moisture in the air undergoes deposition, turning directly from a gas to solid ice crystals on surfaces like leaves and soil.

54. (1) A-iv, B-i, C-ii, D-iii
In the context of Rajasthan's climate, Grishma Ritu or summer lasts from March to mid-June. Varsha Ritu, the monsoon season, spans from mid-June to September. Sharad Ritu, the period of the retreating monsoon or autumn, occurs during October and November. Finally, Shishir or Hemant Ritu, representing the winter season, extends through the months of December, January, and February across the state.

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A. Great Indian Bustard
B. Bengal Tiger
C. Siberian Crane (Historical visitor)
D. Flying Squirrel

List II: (Primary Protected Area in Rajasthan)
i. Keoladeo Ghana National Park
ii. Sitamata Wildlife Sanctuary
iii. Ranthambore National Park
iv. Desert National Park

(1) A-iv, B-iii, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-i, C-iii, D-ii
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

23. Which of the following statements about the Ranthambore National Park is incorrect?
(1) It is bounded to the north by the Banas River and to the south by the Chambal River.
(2) It is renowned for its diurnal tigers which are often seen during the day.
(3) It features the historic Ranthambore Fort within its boundaries.
(4) It is primarily composed of dense subtropical evergreen rainforests.
(5) Question not attempted

24. Which of the following factors is the primary cause for the rapid decline of the Great Indian Bustard population in Rajasthan?
(1) Habitat loss from farming and power lines.
(2) Excessive flooding throughout the western districts.
(3) Overpopulation of herbivorous prey in the desert.
(4) Fungal diseases spreading through native vegetation.
(5) Question not attempted

25. Consider the following statements regarding the cultural and ecological significance of Khejri:
I. It is traditionally worshipped on the festival of Dussehra.
II. Its highly nutritious pods are locally known as Sangari.
III. The tree is an endemic species found only in the Aravalli mountain ranges.
IV. It played a central role in the historic Khejarli conservation movement led by Amrita Devi.

Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

26. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Desert vegetation in Rajasthan often features leaves that are modified into spines or have waxy surfaces.
Reason (R): These modifications help the plants to reduce moisture loss through transpiration in an arid climate.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

27. The term "Xerophytes" specifically refers to:
(1) Plants adapted to survive in highly saline marshlands.
(2) Plants that grow exclusively on rock surfaces at high altitudes.
(3) Aquatic plants floating on freshwater lakes.
(4) Plants adapted to survive in environments with little liquid water.
(5) Question not attempted

28. The timber of which tree is commonly utilized for making high-quality furniture and agricultural implements, earning it the moniker 'Marwar Teak' in Rajasthan?
(1) Khejri
(2) Rohida
(3) Dhok
(4) Babool
(5) Question not attempted

29. Read Statement I and Statement II carefully and choose the correct option:
Statement I: Sariska Tiger Reserve lost its entire tiger population by 2005 primarily due to intensive poaching.
Statement II: The Government of Rajasthan permanently de-notified Sariska as a Tiger

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64. (1) A-iv, B-iii, C-ii, D-i
The 10 cm isohyet represents the extreme western border, while the 25 cm line divides the arid desert into purely arid and semi-arid zones. The 40 cm isohyet marks the western limit of the steppe region, and the 50 cm line roughly bisects the state along the Aravallis. These lines are essential for mapping the rainfall gradients and ecological zones across Rajasthan.

65. (2) Triggering intense tropical cyclones over the Thar desert in the month of June.
Western Disturbances are primarily winter phenomena that bring light rainfall to northern India between December and February. They are not associated with the formation of tropical cyclones, which typically occur in the pre-monsoon and post-monsoon periods over oceanic regions. Furthermore, June weather in the Thar Desert is dominated by heatwaves and the arrival of the monsoon rather than these Mediterranean-origin disturbances.

66. (2) II and III
Statement II is incorrect because continentality actually causes extreme variations between summer and winter temperatures. Statement III is also incorrect because the highest temperatures are recorded in the northern and western desert districts like Churu and Phalodi, not in the southern tribal belt. Temperature inversions, however, are a common and correct phenomenon observed in the desert during clear winter nights.

67. (4) Both statements are correct but Statement II does not explain Statement I.
The northward shift of the ITCZ over the Thar Desert creates a low-pressure trough that draws in monsoon winds, which is a fundamental meteorological process. Separately, the characteristics of this trough indeed dictate the rainfall intensity. While both statements are facts regarding the monsoon mechanism in Rajasthan, the second statement describes the result of the trough's behavior rather than explaining why it forms.

68. (1) Both A and R are true and R is the correct explanation of A.
Mount Abu experiences significantly cooler summer temperatures compared to the nearby low-lying plains of Jalore and Sirohi. This is a direct consequence of the environmental lapse rate, which states that atmospheric temperature decreases as altitude increases. Because Mount Abu is situated at a high elevation in the Aravalli Range, it remains much cooler than the surrounding regions despite the intense summer heat.

69. (3) It occurs on average once every 2 to 3 years.
Long-term climatic data for western Rajasthan shows that drought is a frequent and recurring phenomenon. In the most arid districts, meteorological or agricultural drought occurs on average once every two to three years. This high frequency is due to the extreme variability and unreliability of the monsoon rains in the Thar Desert region, making water security a constant challenge for the local population.

70. (1) I and V
Statement I is incorrect because the Arid region covers approximately 60% of the state's area, not 20%. Statement V is also incorrect because the Very Humid region is not extensive; it is limited to specific areas in the southeast and the Mount Abu region, rather than covering the entire northern plains. The descriptions for the Semi-arid, Sub-humid, and Humid regions are generally accurate.

71. (4) Lack of rain, porous sandy surfaces, and extreme potential evapotranspiration.
Bikaner district lacks flowing rivers due to its extreme arid environment. The region receives very little annual rainfall, which is insufficient to sustain permanent water bodies. Furthermore, the highly porous sandy soil causes any surface water to infiltrate quickly. Combined with exceptionally high potential evapotranspiration rates driven by heat and wind, moisture is lost before it can form stable drainage channels or river systems.

72. (1) BWhw - Hot desert climate with dry winter
In Koeppen's classification system, the code BWhw specifically represents a hot desert climate characterized by low precipitation and dry winters. This classification is perfectly suited for the western parts of Rajasthan, including the Thar Desert. The other options provided in the question misrepresent the standard codes used

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(3) They contain species like mango, jamun, and bamboo.
(4) They are dominated by thorny bushes and cacti.
(5) Question not attempted

8. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Subtropical evergreen forests in Rajasthan are restricted exclusively to the Mount Abu region.
Reason (R): The Mount Abu region provides the necessary high altitude and high rainfall conditions required for these forests.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. Identify the correct statement regarding the tropical dry deciduous forests of Rajasthan.
(1) They are predominantly located in the western Jaisalmer and Barmer districts.
(2) These forests remain entirely green throughout the year regardless of rainfall patterns.
(3) Dhok (Anogeissus pendula) is the dominant tree species found in these forests.
(4) They are characterized by a total lack of undergrowth and seasonal grass cover.
(5) Question not attempted

10. Consider the following statements regarding Rohida:
I. It was declared the State Flower of Rajasthan in 1983.
II. Its scientific name is Tecomella undulata.
III. It is commonly known as Marwar Teak due to its high-quality timber.
IV. It primarily blooms during the peak monsoon season in August.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) II and III only
(5) Question not attempted

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11. Read Statement I and Statement II carefully and choose the correct option:
Statement I: The Great Indian Bustard is predominantly found in the densely forested regions of eastern Rajasthan.
Statement II: Desert National Park provides the ideal dry grassland habitat required for the survival of the Great Indian Bustard.
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

12. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Wildlife Sanctuary / National Park)
A. Keoladeo Ghana National Park
B. Desert National Park
C. Ranthambore National Park
D. Sariska Tiger Reserve
List II: (Associated District)
i. Jaisalmer
ii. Alwar
iii. Bharatpur
iv. Sawai Madhopur
(1) A-iii, B-i, C-iv, D-ii
(2) A-iii, B-ii, C-iv, D-i
(3) A-iv, B-i, C-iii, D-ii
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

13. Which of the following is the most appropriate reason for Keoladeo Ghana National Park being designated as a UNESCO World Heritage Site?
(1) It possesses the highest global density of Bengal tigers found in the wild.
(2) It is the largest naturally occurring deep-water lake located in the Thar Desert.
(3) It is a vital wintering ground for migratory waterfowl like the Siberian crane.
(4) It contains the oldest prehistoric rock paintings discovered in western India.
(5) Question not attempted

CHAPTER 20

Natural Vegetation, Biodiversity and Conservation

1. Which of the following is the most dominant factor that determines the distribution and type of natural vegetation in Rajasthan?
(1) Soil fertility
(2) Rainfall
(3) Altitude
(4) River networks
(5) Question not attempted

2. Which of the following statements is incorrect regarding the desert vegetation found in Rajasthan?
(1) The leaves are broad and thin to maximize sunlight absorption.
(2) The plants typically have deep and extensive root systems.
(3) The stems often have a waxy coating to reduce water loss.
(4) Many plants have thorns instead of leaves to minimize transpiration.
(5) Question not attempted

3. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Forest Type)
A. Tropical Thorn Forests
B. Tropical Dry Deciduous Forests
C. Subtropical Evergreen Forests
D. Mixed Deciduous Forests
List II: (Region in Rajasthan)
i. Mount Abu Region
ii. Western Arid Region
iii. Eastern and South-Eastern Region
iv. Southern Aravalli Region
(1) A-ii, B-iii, C-i, D-iv
(2) A-ii, B-iv, C-i, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-2, C-iii, D-i
(5) Question not attempted

4. What is the primary ecological effect of the severe temperature extremes and scanty rainfall in western Rajasthan?
(1) Proliferation of broad-leaved evergreen trees
(2) Formation of dense canopy deciduous forests
(3) High incidence of epiphytic orchids
(4) Dominance of xerophytic plant species
(5) Question not attempted

5. Consider the following statements regarding the Tropical Thorn Forests of Rajasthan:
I. They are predominantly found in the western arid and semi-arid regions.
II. The vegetation primarily consists of trees with deep roots and thick bark.
III. These forests require an annual rainfall of more than 150 cm to thrive.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

6. What is the botanical name of the Khejri tree, the State Tree of Rajasthan?
(1) Tecomella undulata
(2) Prosopis cineraria
(3) Acacia nilotica
(4) Butea monosperma
(5) Question not attempted

7. Which of the following is not a characteristic feature of the subtropical evergreen forests found in the Mount Abu region?
(1) They are found at higher altitudes with relatively lower temperatures.
(2) They receive the highest average rainfall in the state.

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I. It spans across the districts of Jaisalmer and Barmer.
II. It protects a fragile ecosystem consisting of sand dunes and craggy rocks.
III. It features dense teak forests that remain green year-round.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

38. Identify the correct statement regarding the Mukundra Hills Tiger Reserve.
(1) It was the very first tiger reserve officially established in Rajasthan.
(2) It encompasses the Darrah, Chambal, and Jawahar Sagar sanctuaries.
(3) It is primarily famous for being the winter home of the Siberian cranes.
(4) It is completely devoid of forest cover and consists only of deep ravines.
(5) Question not attempted

39. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Tropical dry deciduous forests are predominantly found in the eastern and southeastern parts of Rajasthan.
Reason (R): These regions receive relatively higher annual rainfall ranging between 50 cm and 100 cm, which supports deciduous tree growth.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

40. By what local name is the Khejri tree revered in ancient religious texts and widely known in rural Rajasthan?
(1) Shami
(2) Palash
(3) Kadam
(4) Mahua
(5) Question not attempted

41. What is the primary ecological consequence of unchecked overgrazing on the natural vegetation of Rajasthan?
(1) Rapid afforestation of indigenous species
(2) Increase in soil moisture retention
(3) Severe soil erosion and acceleration of desertification
(4) Transition of thorn forests into evergreen forests
(5) Question not attempted

42. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Conservation Strategy/Feature)
A. Relocation and repopulation of Tigers
B. Captive breeding of Great Indian Bustard
C. Prohibition of cutting green trees by Bishnoi community
D. Creation of artificial wetlands
List II: (Targeted Entity in Rajasthan)
i. Khejri
ii. Sariska Tiger Reserve
iii. Keoladeo National Park
iv. Desert National Park
(1) A-ii, B-iv, C-i, D-iii
(2) A-ii, B-iv, C-iii, D-i
(3) A-iv, B-ii, C-i, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

43. Consider the following challenges to biodiversity conservation in Rajasthan:
I. Expansion of illegal mining in the Aravalli hills.
II. Habitat fragmentation due to linear infrastructure projects.
III. Proliferation of invasive species like Prosopis juliflora.
IV. High annual rainfall causing widespread flooding of natural habitats.
Which of the above represents genuine conservation challenges in the state?
(1) I, II and IV
(2) I, II and III
(3) II, III and IV
(4) I, III and IV
(5) Question not attempted

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14. Consider the following statements regarding tiger reserves and wildlife in Rajasthan:
I. Ranthambore was among the first nine tiger reserves established under Project Tiger.
II. Sariska successfully executed a tiger relocation programme after a local extinction.
III. Mukundra Hills is the third declared tiger reserve in Rajasthan.
IV. Desert National Park is a major breeding ground for Bengal tigers.
V. Keoladeo Ghana National Park primarily focuses on avian conservation rather than large felines.
Which of the above statement(s) is/are correct?
(1) I, II, III and V
(2) I, II, IV and V
(3) II, III, IV and V
(4) I, III, IV and V
(5) Question not attempted

15. In which district is the Mukundra Hills Tiger Reserve primarily located?
(1) Kota
(2) Bikaner
(3) Jodhpur
(4) Udaipur
(5) Question not attempted

16. Which of the following major fauna species is the designated State Animal (wild category) of Rajasthan?
(1) Blackbuck
(2) Chinkara
(3) Desert Fox
(4) Great Indian Bustard
(5) Question not attempted

17. Identify the correct pair of Rajasthan's state symbols and their common ecological category.
(1) Rohida - Aquatic plant
(2) Khejri - Xerophytic tree
(3) Godawan - Migratory waterfowl
(4) Chinkara - Carnivorous predator
(5) Question not attempted

18. Which of the following represents the correct spatial sequence of dominant natural vegetation zones in Rajasthan as one moves from West to East?
(1) Tropical Dry Deciduous - Subtropical Evergreen - Tropical Thorn
(2) Tropical Thorn - Tropical Dry Deciduous - Mixed Deciduous
(3) Mixed Deciduous - Tropical Thorn - Tropical Dry Deciduous
(4) Subtropical Evergreen - Tropical Dry Deciduous - Tropical Thorn
(5) Question not attempted

19. How does the Khejri tree fundamentally support agroforestry in the arid ecosystems of Rajasthan?
(1) By producing a dense canopy that completely blocks sunlight from reaching the soil level.
(2) By acting as a commercial timber source that requires heavy irrigation to remain viable.
(3) By fixing nitrogen and enriching soil without competing for surface water with crops.
(4) By repelling all native bird species to protect agricultural crops from grain scavenging.
(5) Question not attempted

20. Consider the following statements regarding the Sariska Tiger Reserve:
I. It is situated in the Aravalli hills of the Alwar district.
II. It gained global attention for successfully relocating tigers from Ranthambore in 2008.
III. It is currently recognized as a UNESCO World Heritage site for its architectural ruins.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

21. What is the local name of the Great Indian Bustard in Rajasthan?
(1) Kurja
(2) Saras
(3) Godawan
(4) Khejrali
(5) Question not attempted

22. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Wildlife Species)

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55. (4) Mount Abu
Mount Abu records the highest number of rainy days in Rajasthan, typically averaging around forty-eight days per year. This high frequency is attributed to its mountainous topography and elevation, which forces the moisture-laden winds of the southwest monsoon to rise and cool. This orographic effect results in more frequent and sustained precipitation compared to the surrounding plains and the arid desert regions.

56. (3) I and IV
Statement I is incorrect because Loo is a dry, hot wind, not moisture-laden. Statement IV is also incorrect because the frequency of dust storms (Andhi) is highest in the northwestern districts like Sri Ganganagar and Bikaner, rather than in the southeastern districts. Andhi does lead to a temporary drop in temperature, and Loo is indeed a severe heatwave phenomenon in the summer.

57. (3) Jaisalmer
Bharatpur, Dholpur, and Sawai Madhopur are all located in the eastern and southeastern parts of Rajasthan, which fall under the "Humid" climatic classification due to their higher annual rainfall. Jaisalmer, however, is situated in the extreme west and is the core of the "Arid" region. It receives very little rainfall and exhibits extreme desert characteristics, making it the odd one out.

58. (1) It reaches its maximum during the peak monsoon months of July and August.
Relative humidity in Rajasthan fluctuates significantly with the seasons. It reaches its peak during July and August when the moisture-laden winds of the southwest monsoon cover the state. Conversely, humidity levels are at their lowest during the peak summer months of April and May, when the air is extremely dry and hot, and again during the transition period of the retreating monsoon.

59. (4) January
January is statistically the coldest month across the entire state of Rajasthan. During this month, the region is often under the influence of cold waves originating from the Himalayan ranges to the north. Temperatures can drop significantly, often reaching near or below freezing in many northern and western districts, leading to frost and requiring people and livestock to seek protection from the cold.

60. (2) From Southeast to Northwest
The Bay of Bengal branch of the southwest monsoon enters Rajasthan from the southeast and east. As these moisture-laden winds advance towards the northwest, they provide significant rainfall to the Hadoti plateau and the eastern plains. However, their moisture content gradually depletes as they travel further across the state, resulting in much lower rainfall in the western and northwestern desert regions.

61. (3) Reflection of solar radiation leads to rapid cooling at night, increasing the diurnal range.
The rapid loss of terrestrial radiation leads to rapid cooling at night, increasing the diurnal range. The sandy soil of the Thar Desert has a high albedo, reflecting a significant portion of incoming solar radiation. While it heats up quickly during the day, this surface also facilitates the rapid loss of terrestrial radiation once the sun sets. This efficient cooling process at night, combined with daytime heating, contributes to the extreme diurnal temperature range characteristic of arid environments.

62. (4) Meteorological Drought
A meteorological drought is defined strictly based on the degree of dryness and the duration of the dry period. In Rajasthan, it occurs when the actual rainfall received in a specific area is significantly less than the long-term climatological average for that region. This is the first stage of drought, which can subsequently lead to agricultural, hydrological, and socio-economic water crises.

63. (1) Its moisture content increases as it moves from eastern Rajasthan towards the western desert.
The statement that the moisture content of the Bay of Bengal branch increases as it moves west is incorrect. In reality, as the winds travel further inland and away from their oceanic source, they lose moisture through precipitation. Consequently, the eastern parts of the state receive the most rain, and the moisture levels in the winds drop significantly by the time they reach the west.

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Reserve following the local extinction.
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

30. Arrange the following Tiger Reserves of Rajasthan in the chronological order of their official notification as Tiger Reserves:
I. Mukundra Hills
II. Sariska
III. Ranthambore
Which of the following is the correct sequence?
(1) I, II, III
(2) III, II, I
(3) II, III, I
(4) III, I, II
(5) Question not attempted

31. Consider the following statements regarding Keoladeo Ghana National Park:
I. It is situated in the Bharatpur district.
II. It is a recognized Ramsar Wetland site.
III. It features constructed mosaic habitats of dry grasslands, woodlands, and swamps.
IV. It acts as a major breeding ground for the endangered Great Indian Bustard.
V. It was historically a duck-shooting reserve for the Maharajas.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) II and V only
(5) Question not attempted

32. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Common Name)
A. Khejri
B. Rohida
C. Chinkara
D. Great Indian Bustard
List II: (Scientific Name)
i. Gazella bennettii
ii. Ardeotis nigriceps
iii. Prosopis cineraria
iv. Tecomella undulata
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-iv, C-ii, D-i
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

33. Which of the following districts is least likely to feature tropical dry deciduous forests?
(1) Chittorgarh
(2) Jaisalmer
(3) Sawai Madhopur
(4) Udaipur
(5) Question not attempted

34. Identify the correctly matched pair of the National Park and its associated key geographical feature.
(1) Ranthambore National Park - Padam Talao
(2) Keoladeo Ghana National Park - Aravali Peak
(3) Desert National Park - Chambal River Gorge
(4) Mukundra Hills - Sand Dunes
(5) Question not attempted

35. What is the most appropriate reason for establishing wildlife corridors between tiger reserves like Ranthambore and Mukundra Hills?
(1) To promote organized large-scale timber extraction projects.
(2) To create continuous grazing land for migrating domestic livestock herds.
(3) To allow genetic exchange and prevent tiger inbreeding.
(4) To restrict the movement of all large predators to a single enclosed district.
(5) Question not attempted

36. Which type of natural vegetation dominates the slopes of the Mount Abu region at higher elevations?
(1) Tropical Dry Deciduous
(2) Tropical Thorn
(3) Alpine Meadows
(4) Subtropical Evergreen
(5) Question not attempted

37. Consider the following statements regarding the Desert National Park:

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for monsoon, tropical wet, or semi-arid climates in the context of Indian geography.

73. (3) Windward location relative to moisture-laden Bay of Bengal winds entering from the east.
The Hadoti region in southeastern Rajasthan receives more rainfall because it is located on the windward side of the moisture-laden winds coming from the Bay of Bengal. These winds enter the state from the east and southeast, shedding significant moisture over the plateau. By the time these winds reach western Rajasthan, they have already lost most of their moisture, leading to the observed aridity in the desert.

74. (1) A-ii, B-iv, C-i, D-iii
Loo is the hot, dry summer wind, while Andhi refers to violent dust storms that temporarily lower temperatures. Mawath is the vital winter rainfall originating from Mediterranean disturbances. Purvaiya describes the moisture-bearing winds that blow from the east. Matching these terms correctly is essential for understanding the seasonal weather patterns and their impact on the environment and agriculture in the state of Rajasthan.

75. (4) Hanumangarh
Banswara, Dungarpur, and the Mount Abu region in Sirohi are all located in southern and southwestern Rajasthan, where the Arabian Sea branch of the monsoon provides significant rainfall. Hanumangarh, however, is situated in the far north of the state. It primarily receives moisture from the Bay of Bengal branch or winter rains from Western Disturbances, making it less influenced by the Arabian Sea branch.

76. (2) III and IV
Statement III is incorrect because Rajasthan's location is actually influenced by the subtropical high-pressure belt. Statement IV is incorrect because the Aravalli Range does not enhance rainfall uniformly; it creates a significant rain shadow effect on its western flank. The Thar Desert's heat and the state's lack of forest cover are indeed major factors that drive its extreme temperature and wind patterns.

77. (3) Five
Rajasthan is generally divided into five distinct climatic regions based on rainfall and temperature gradients. These include the Arid region, the Semi-arid (Steppe) region, the Sub-humid region, the Humid region, and the Very Humid region. This classification helps in understanding the diverse environmental conditions ranging from the extreme western desert to the relatively wet and forested areas in the southeast and south.

78. (4) Sudden onset of violent thunderstorms and heavy hail.
The Loo is characterized by extreme heat and dryness, leading to soil desiccation, heatstroke, and the wilting of vegetation. It is a stable, hot wind phenomenon and does not typically trigger violent thunderstorms or hailstorms. Such convective storms are usually associated with "Andhi" or pre-monsoon disturbances rather than the persistent, scorching westerly winds that define the peak summer heat across the state.

79. (1) Intensity decreases from the northwest towards the south and southeast.
Mawath is caused by Western Disturbances that enter India from the northwest. Consequently, the intensity and frequency of this winter rainfall are highest in the northwestern and northern districts of Rajasthan. As the weather systems move further south and southeast across the state, they gradually lose moisture and strength, leading to a noticeable decrease in precipitation levels in those specific directions.

80. (1) II, III, IV, I
Moving from the western border toward the eastern part of Rajasthan, the climatic regions transition based on increasing rainfall. The sequence starts with the Arid region in the far west. This is followed by the Semi-arid transitional zone. Next is the Sub-humid region, which lies along the Aravallis. Finally, the Humid region covers the eastern plains and the southeastern plateau areas.

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44. Which of the following is an "Odd one out" regarding the traditional conservation practices in Rajasthan?
(1) Orans (sacred groves)
(2) Commercial clear-cutting
(3) Johads (traditional water bodies)
(4) Khejarli martyrdom
(5) Question not attempted

45. Read Statement I and Statement II carefully and choose the correct option:
Statement I: The Rohida tree produces vibrant flowers that are usually yellow, orange, or red.
Statement II: The blooming of Rohida flowers typically occurs during the peak winter months of December and January.
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

46. Identify the incorrect pair of a Wildlife Sanctuary and its notable feature.
(1) Tal Chhapar Sanctuary - Blackbuck habitat
(2) Sitamata Sanctuary - Flying squirrels
(3) National Chambal Sanctuary - Gharial conservation
(4) Kumbhalgarh Sanctuary - Mangrove vegetation
(5) Question not attempted

47. Which of the following represents the correct spatial sequence of Rajasthan's Tiger Reserves from North to South?
(1) Sariska - Ranthambore - Mukundra Hills
(2) Mukundra Hills - Ranthambore - Sariska
(3) Ranthambore - Sariska - Mukundra Hills
(4) Sariska - Mukundra Hills - Ranthambore
(5) Question not attempted

48. Consider the following statements regarding the Subtropical Evergreen Forests in Rajasthan:
I. They constitute less than 1% of the total forest area in Rajasthan.
II. They are restricted to the high-altitude zone of Mount Abu.
III. They are characterized by species that shed all their leaves simultaneously in winter.
IV. They feature a dense undergrowth of shrubs and climbers.
V. They receive an average annual rainfall exceeding 150 cm.
Which of the above statement(s) is/are correct?
(1) I, II, IV and V
(2) I, II, III and V
(3) II, III, IV and V
(4) I, III, IV and V
(5) Question not attempted

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49. In which year was the Chinkara officially declared as the State Animal (wildlife category) of Rajasthan?
(1) 1973
(2) 1981
(3) 1992
(4) 2005
(5) Question not attempted

50. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Fauna)
A. Chinkara
B. Great Indian Bustard
C. Tiger
D. Siberian Crane
List II: (Distinctive Trait/Habitat characteristic)
i. Heavy flying bird of arid grasslands
ii. Apex predator of deciduous ecosystems
iii. Migratory bird relying on wetlands
iv. Small antelope adapted to low water intake
(1) A-iv, B-i, C-ii, D-iii
(2) A-i, B-iv, C-ii, D-iii
(3) A-iv, B-ii, C-i, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

51. What is the primary adverse effect of unregulated stone mining in the Aravalli ranges on local biodiversity?
(1) It introduces exotic marine fish species into small inland desert lakes.
(2) It significantly lowers the ambient temperature of the surrounding region.
(3) It destroys habitats and blocks vital wildlife corridors.
(4) It enhances the natural regeneration of

predominantly a resident bird of arid grasslands rather than a migratory wetland bird?
(1) Godawan (Great Indian Bustard)
(2) Siberian Crane (Migratory)
(3) Bar-headed Goose (Migratory)
(4) Great White Pelican (Migratory)
(5) Question not attempted

67. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Conservation Milestone)
A. Project Tiger launched in Ranthambore
B. Keoladeo Ghana declared a UNESCO World Heritage Site
C. Chinkara designated as State Animal
D. Khejri designated as State Tree
List II: (Associated Year/Event in Rajasthan)
i. 1985
ii. 1973-74
iii. 1983
iv. 1981
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

68. Which of the following is correctly paired regarding the dominant flora and its primary utility in Rajasthan?
(1) Babool - Used for high-altitude commercial furniture timber.
(2) Rohida - Used primarily for essential perfume oil extraction.
(3) Salar - Used mostly for the edible fruit production markets.
(4) Tendu - Leaves used for making traditional bidis.
(5) Question not attempted

69. In which year was the Ranthambore National Park initially brought under the umbrella of 'Project Tiger'?
(1) 1955
(2) 1973
(3) 1984
(4) 1992
(5) Question not attempted

70. Which of the following is not considered a major threat to biodiversity and conservation in Rajasthan?
(1) Habitat fragmentation by road networks
(2) Traditional Oran and Gochar land systems
(3) Illegal wildlife poaching
(4) Climate change leading to erratic rainfall
(5) Question not attempted

71. Identify the incorrect statement regarding the biodiversity hotspots and challenges in Rajasthan.
(1) The Aravalli range acts as a crucial ecotone and biodiversity hotspot in the state.
(2) Introduction of the invasive vilayati babool (Prosopis juliflora) has harmed native flora.
(3) Unregulated grazing pressures degrade the limited natural pastures available.
(4) The Thar Desert has a very low biodiversity index among global deserts.
(5) Question not attempted

72. What is the cause and effect relationship associated with the widespread planting of Prosopis juliflora (Vilayati Babool) in Rajasthan?
(1) It suppressed native flora through invasion and competition.
(2) It caused a major increase in native grass species by providing permanent shade.
(3) It resulted in a significant and rapid rise in the groundwater table in arid zones.
(4) It provided an exclusive and highly nutritious fodder for all native herbivores.
(5) Question not attempted

73. Before being upgraded and renamed as Keoladeo Ghana National Park, by what popular name was this wildlife sanctuary globally known?
(1) Darrah Wildlife Sanctuary
(2) Tal Chhapar Reserve
(3) Bharatpur Bird Sanctuary
(4) Ramgarh Vishdhari Sanctuary
(5) Question not attempted

74. Read Statement I and Statement II carefully and choose the correct option:
Statement I: The Aravalli Mountain Range acts as a climatic barrier, preventing the eastward expansion of the Thar Desert.
Statement II: The vegetation on the western slopes of the Aravallis is noticeably denser and

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I. It is named after the Mukundra hills of the Vindhyan range.
II. It is located in the southeastern part of Rajasthan.
III. It is famous for housing the Gagroni parrot.
IV. It primarily consists of desert xerophytic vegetation.

Which of the above statement(s) is/are correct?
(1) I, II and III
(2) I, III and IV
(3) II, III and IV
(4) I, II and IV
(5) Question not attempted

60. Consider the following natural vegetation types of Rajasthan:
I. Subtropical Evergreen Forests
II. Tropical Thorn Forests
III. Tropical Dry Deciduous Forests

Which of the following represents the correct sequence in descending order based on their approximate geographical area coverage in the state?
(1) III, II, I
(2) II, III, I
(3) I, III, II
(4) II, I, III
(5) Question not attempted

61. Keoladeo Ghana National Park relies heavily on artificial water supply during dry months. Which rivers historically feed the wetland system of this park?
(1) Luni and Sukri
(2) Chambal and Banas
(3) Banganga and Gambhiri
(4) Mahi and Som
(5) Question not attempted

62. Identify the incorrect statement concerning the ecological adaptation of flora in the Mount Abu region.
(1) The flora is adapted to higher humidity levels compared to the rest of Rajasthan.
(2) The region features a unique blend of evergreen and semi-evergreen species.
(3) Epiphytes like orchids can be found in this region due to favorable microclimates.
(4) The plants have deep taproots exclusively adapted to survive in loose desert sand.
(5) Question not attempted

63. What is considered the most appropriate and sustainable method to combat desertification and stabilize sand dunes in western Rajasthan?
(1) Afforestation using indigenous xerophytic species like Khejri and Rohida.
(2) Extensive canal irrigation for water-intensive cash crops and large plantations.
(3) Complete removal of all scrub vegetation to plant exotic and fast-growing grass.
(4) Paving the desert surface with concrete to stop all natural soil movement.
(5) Question not attempted

64. Read Statement I and Statement II carefully and choose the correct option:
Statement I: The dried pods of the Khejri tree are a vital ingredient in the traditional Rajasthani dish 'Panchkuta'.
Statement II: Khejri trees shed all their leaves during extreme summers, rendering them useless for livestock fodder during droughts.
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

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65. Consider the following adaptive features of vegetation:
I. Succulent stems to store water
II. Sunken stomata to minimize water loss
III. Broad, thin leaves to catch maximum sunlight
IV. Long taproot systems to reach deep groundwater
V. Buttress roots for stability in waterlogged soils

Which of the above combinations represents the adaptations of desert vegetation in Rajasthan?
(1) I, II and IV
(2) II, III and V
(3) I, III and IV
(4) I, II and V
(5) Question not attempted

66. Which of the following bird species found in Rajasthan is an "Odd one out" as it is

outcrops. However, it does not contain teak forests; instead, its vegetation is sparse and xerophytic, adapted to the extreme heat and low rainfall of the Thar Desert.

38. (2) It encompasses the Darrah, Chambal, and Jawahar Sagar sanctuaries.
Mukundra Hills Tiger Reserve is a consolidated protected area that integrates the landscapes of the Darrah Wildlife Sanctuary, the National Chambal Sanctuary, and the Jawahar Sagar Sanctuary. It provides a diverse habitat ranging from hills to riverine systems. It was not the first reserve in Rajasthan, nor is it a home for Siberian cranes or entirely devoid of forest cover.

39. (1) Both A and R are true and R is the correct explanation of A.
Tropical dry deciduous forests are concentrated in the eastern and southeastern parts of Rajasthan because these areas receive sufficient annual rainfall to support tree growth. The typical rainfall range of 50 cm to 100 cm allows trees like Dhok to thrive. These species shed their leaves seasonally during the dry months, a direct adaptation to the regional moisture patterns.

40. (1) Shami
The Khejri tree is traditionally known as 'Shami' in ancient religious texts and is deeply revered in Hindu culture. In rural Rajasthan, it is a symbol of resilience and life. The tree's religious significance is highlighted during festivals like Dussehra, where it is worshipped for its historical and ecological importance to the desert communities and their livestock.

41. (3) Severe soil erosion and acceleration of desertification
Unregulated overgrazing by livestock is a major threat to Rajasthan's fragile ecosystem. When animals consume the limited grass and shrub cover, the soil becomes exposed to wind and water. This leads to severe soil erosion and the loss of topsoil nutrients. Ultimately, this process accelerates desertification, making it harder for native vegetation to regenerate and reducing the land's productivity.

42. (1) A-ii, B-iv, C-i, D-iii
Rajasthan employs various conservation strategies for its unique biodiversity. Tiger relocation is most famously associated with Sariska. Captive breeding programs for the Great Indian Bustard are centered at Desert National Park. The Bishnoi community's historic prohibition of cutting green trees is focused on Khejri. Finally, the creation of artificial wetlands is a defining feature of management at Keoladeo National Park.

43. (2) I, II and III
Rajasthan faces significant environmental challenges, including habitat destruction from illegal mining in the Aravallis and fragmentation caused by infrastructure projects like roads. The spread of invasive species like Prosopis juliflora further threatens native biodiversity. However, high annual rainfall causing widespread flooding is not a typical challenge for the state, as most of its regions are characterized by water scarcity.

44. (2) Commercial clear-cutting
Rajasthan has a rich history of community-led conservation, including the protection of sacred groves called Orans and the use of traditional water harvesting structures like Johads. The Khejarli martyrdom reflects deep ecological values. Commercial clear-cutting, however, is a destructive practice involving the total removal of trees for profit, which stands in direct opposition to these traditional sustainable conservation methods.

45. (3) Statement I is correct but Statement II is incorrect.
The Rohida tree is famous for its large, vibrant flowers that appear in shades of yellow, orange, and red, adding color to the desert landscape. However, these flowers do not bloom during the peak winter months. Instead, the blooming period occurs during the spring, typically around March and April, which is when the tree becomes most visually striking.

46. (4) Kumbhalgarh Sanctuary - Mangrove vegetation
Kumbhalgarh Sanctuary is located in the Aravalli hills and is known for its dry deciduous forests and wildlife like wolves and leopards. It does not contain mangrove vegetation, which is exclusively found in coastal saline environments. The other pairs are correct: Tal Chhapar is a

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taller than on the eastern slopes.
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

75. In the context of Rajasthan's conservation efforts, which specific designation highlights Keoladeo National Park's international importance as a wetland habitat?
(1) Project Elephant Reserve
(2) Biosphere Reserve
(3) Marine Protected Area
(4) Ramsar Site
(5) Question not attempted

76. Identify the correct statement regarding the Desert Fox, an important fauna species of Rajasthan.
(1) It is exclusively found in the dense forests of the southern Aravallis.
(2) It inhabits arid scrublands and eats rodents and insects.
(3) It is an introduced species brought from the African savanna regions.
(4) It requires large and perennial water bodies for its daily survival needs.
(5) Question not attempted

77. A botanist observes a plant in Rajasthan that exhibits a massive network of shallow roots, fleshy stems, and a thick waxy cuticle. To which ecological category does this plant most likely belong?
(1) Hydrophyte
(2) Mesophyte
(3) Xerophyte
(4) Halophyte
(5) Question not attempted

78. In which year was the Mukundra Hills region officially declared as a Tiger Reserve by the Government of India?
(1) 1973
(2) 1994
(3) 2013
(4) 2021
(5) Question not attempted

79. What was the most appropriate and defining success factor of the Sariska tiger relocation programme initiated in 2008?
(1) It was the world's first successful relocation of tigers where they were extinct.
(2) It relied entirely on importing Siberian tigers to adapt to the local Aravalli climate.
(3) It completely eradicated all human settlements within a 100 km radius of the reserve.
(4) It involved shifting the reserve's geographical boundaries to include the Chambal river.
(5) Question not attempted

80. Which of the following is an "Odd one out" when grouping the primary protected habitats of the Great Indian Bustard in Rajasthan?
(1) Desert National Park
(2) Mount Abu Wildlife Sanctuary
(3) Sorsan Region (Baran)
(4) Shokaliya Area (Ajmer)
(5) Question not attempted

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more rugged terrain and higher rainfall support mixed deciduous forests, reflecting the state's transition across moisture zones.

19. (3) By fixing nitrogen and enriching soil without competing for surface water with crops.
The Khejri tree is fundamental to desert agroforestry because it enhances soil fertility through nitrogen fixation. Its deep taproot system draws water from deep underground layers, ensuring it does not compete with surface crops for moisture. Furthermore, its sparse canopy allows sufficient sunlight to reach the ground, enabling farmers to cultivate crops directly underneath the tree's protective shade.

20. (1) I and II only
Sariska Tiger Reserve is situated in the Aravalli hills of Alwar and is historically significant for the 2008 tiger relocation project following a total loss of its population. While it contains historical ruins like the Kankwari Fort, it is not a UNESCO World Heritage site for architecture. The reserve's primary focus remains on the conservation of tigers and biodiversity.

21. (3) Godawan
In Rajasthan, the Great Indian Bustard is locally referred to as Godawan. This large, heavy bird is a symbol of the desert's grassland ecosystem and is the State Bird of Rajasthan. Due to its critically endangered status, Godawan has become the focus of intense conservation efforts, particularly within its primary habitats in the Jaisalmer and Barmer districts.

22. (1) A-iv, B-iii, C-i, D-ii
Different wildlife species in Rajasthan are associated with specific protected areas. The Great Indian Bustard is found in the Desert National Park, while Bengal tigers are the primary attraction at Ranthambore. The Siberian crane was historically a visitor to Keoladeo Ghana National Park. The rare flying squirrel is specifically found in the dense forests of Sitamata Wildlife Sanctuary.

23. (4) It is primarily composed of dense subtropical evergreen rainforests.
Ranthambore National Park is characterized by tropical dry deciduous forests and open grassy meadows, not subtropical evergreen rainforests. It is famous for its diurnal tigers and the historic Ranthambore Fort located inside the park. The park is geographically bounded by the Banas River to the north and the Chambal River to the south, providing a unique riverine ecosystem.

24. (1) Habitat loss from farming and power lines.
The rapid decline of the Great Indian Bustard is primarily driven by habitat fragmentation and loss due to agricultural expansion and the installation of high-voltage power lines. As a large bird with poor frontal vision, it frequently collides with these wires. Additionally, the conversion of grasslands into farmlands has reduced the undisturbed nesting areas required for its survival.

25. (1) I, II and IV
Khejri is culturally revered, worshipped during Dussehra, and central to the historic Khejarli movement where many sacrificed lives for its protection. Its nutritious pods, Sangari, are a culinary staple. However, it is not endemic only to the Aravallis; it is widespread across the Thar Desert and other arid regions of India, making statement III incorrect.

26. (1) Both A and R are true and R is the correct explanation of A.
Desert plants in Rajasthan have evolved several morphological adaptations to cope with extreme aridity. Modifying leaves into spines or developing thick waxy cuticles are effective strategies to minimize the surface area exposed to the air. This significantly reduces moisture loss through transpiration, allowing the plants to maintain their internal water balance even in the scorching desert heat.

27. (4) Plants adapted to survive in environments with little liquid water.
Xerophytes are a specific group of plants that have evolved structural and physiological adaptations to thrive in environments with limited liquid water availability. Common in Rajasthan's Thar Desert, these adaptations include deep roots, succulent tissues for water storage, and reduced leaf surfaces. These features allow them to survive long periods of drought and high evaporation rates characteristic of arid climates.

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9. (3) Dhok (Anogeissus pendula) is the dominant tree species found in these forests.
Tropical dry deciduous forests are primarily located in the eastern and southeastern parts of Rajasthan, where rainfall is relatively higher. The dominant species in these forests is Anogeissus pendula, locally known as Dhok. These trees are adapted to the seasonal climate, shedding their leaves during the dry summer months to conserve water and surviving on stored nutrients.

10. (3) IV only
Rohida, scientifically named Tecomella undulata, was declared Rajasthan's State Flower in 1983. It is highly valued for its timber, earning the name Marwar Teak. While it is known for its beautiful flowers, the blooming period is incorrect; Rohida flowers typically appear during the spring months of March and April, rather than during the peak monsoon season in August.

11. (4) Statement I is incorrect but Statement II is correct.
The Great Indian Bustard is not found in the dense forests of eastern Rajasthan; rather, it is a flagship species of the arid grasslands in the west. Desert National Park serves as the most critical habitat for this endangered bird, providing the open dry landscape and scrub vegetation necessary for its foraging, breeding, and overall survival in the wild.

12. (1) A-iii, B-i, C-iv, D-ii
Rajasthan's protected areas are distributed across various districts. Keoladeo Ghana National Park is located in Bharatpur, while the vast Desert National Park is situated in Jaisalmer. Ranthambore National Park, famous for its tigers, is found in Sawai Madhopur. Sariska Tiger Reserve is located in Alwar, representing different ecosystems from wetlands and deserts to dry deciduous forest habitats.

13. (3) It is a vital wintering ground for migratory waterfowl like the Siberian crane.
Keoladeo Ghana National Park was designated a UNESCO World Heritage Site due to its immense ecological significance as a wetland habitat. It serves as one of the world's most important wintering grounds for thousands of migratory birds. Historically, it was particularly famous for being the only wintering site for the central population of the critically endangered Siberian cranes.

14. (1) I, II, III and V
Rajasthan has multiple tiger reserves with significant conservation histories. Ranthambore was an early inclusion in Project Tiger, while Sariska is famous for the first successful tiger relocation after local extinction. Mukundra Hills was the third declared reserve. While Keoladeo focuses on avian life, Desert National Park is a grassland habitat for bustards, not a breeding ground for tigers.

15. (1) Kota
The Mukundra Hills Tiger Reserve is primarily located in the Kota district of Rajasthan. It encompasses a unique landscape of hills, valleys, and riverine ecosystems formed by the Chambal River and its tributaries. Established to provide a safe habitat for tigers and other wildlife, it integrates parts of the Darrah, Chambal, and Jawahar Sagar sanctuaries into a protected zone.

16. (2) Chinkara
The Chinkara, also known as the Indian Gazelle, is the designated State Animal of Rajasthan under the wild category. This small antelope is well-adapted to the arid and semi-arid environments of the Thar Desert. It is known for its ability to survive on minimal water, obtaining most of its moisture from the plants and dew it consumes daily.

17. (2) Khejri - Xerophytic tree
Khejri is the State Tree of Rajasthan and is a classic example of a xerophytic species, adapted to survive in extreme drought conditions. Unlike the options pairing Rohida with aquatic plants or Godawan with waterfowl, this pair correctly identifies the tree's ecological adaptation. Khejri's deep roots and small leaves are essential features that allow it to thrive in deserts.

18. (2) Tropical Thorn - Tropical Dry Deciduous - Mixed Deciduous
In Rajasthan, vegetation types change from west to east as rainfall increases. The westernmost part is dominated by tropical thorn forests and desert scrub. Moving east, as precipitation becomes more regular, tropical dry deciduous forests appear. Finally, the south-eastern regions with

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subtropical evergreen forest zones.
(5) Question not attempted

52. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Ranthambore National Park is an ideal and thriving habitat for Bengal tigers.
Reason (R): It offers a rich prey base and a mix of dry deciduous forests, open grassy meadows, and adequate water bodies.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

53. Which of the following is not a characteristic of Tropical Dry Deciduous Forests in Rajasthan?
(1) The trees shed their leaves during the dry season to conserve water.
(2) They are primarily found in regions receiving 50 cm to 100 cm of rainfall.
(3) The canopy is dense, preventing sunlight from reaching the ground.
(4) Species like Dhok, Salar, and Tendu are prominent in these forests.
(5) Question not attempted

54. Which of the following statements is correct regarding the historical background of Sariska?
(1) It was initially established directly as a National Park in the year 1950.
(2) It was historically the hunting reserve of the Alwar State.
(3) It has never been brought under the Project Tiger initiative.
(4) It was originally a protected wetland explicitly for migratory flamingos.
(5) Question not attempted

55. Consider the following statements regarding wildlife protection in Rajasthan:
I. The Wildlife (Protection) Act, 1972 is the primary legislation governing wildlife sanctuaries in the state.
II. The Great Indian Bustard is legally protected under Schedule I of the Wildlife (Protection) Act.
III. Poaching of Chinkara is permitted during specific religious festivals.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

56. Which two districts primarily share the geographical area of the Desert National Park?
(1) Jaisalmer and Barmer
(2) Jodhpur and Bikaner
(3) Nagaur and Churu
(4) Jalore and Pali
(5) Question not attempted

57. Which specific habitat type is most critical for the nesting and breeding of the Great Indian Bustard?
(1) High-altitude coniferous forests in the hills.
(2) Dense tropical swamps with heavy vegetation.
(3) Open dry scrublands and undisturbed grasslands.
(4) Steep rocky escarpments found in the ravines.
(5) Question not attempted

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58. Match the items in List I with those in List II and select the correct answer using the codes given below:
List I: (Forest/Vegetation Class)
A. Desert Vegetation
B. Tropical Thorn Forests
C. Tropical Dry Deciduous Forests
D. Subtropical Evergreen Forests
List II: (Typical Rainfall Requirement)
i. Less than 25 cm
ii. 25 cm to 50 cm
iii. 50 cm to 100 cm
iv. Above 150 cm
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

59. Consider the following statements regarding the Mukundra Hills Tiger Reserve:

28. (2) Rohida
Rohida, or Tecomella undulata, is famously known as the 'Marwar Teak' because of its high-quality, durable timber. The wood is prized for its strength and resistance to decay, making it ideal for crafting fine furniture and agricultural tools. Beyond its economic value, Rohida is also celebrated for its vibrant flowers and its role as the State Flower of Rajasthan.

29. (3) Statement I is correct but Statement II is incorrect.
By 2005, Sariska Tiger Reserve tragically lost its entire tiger population due to systemic poaching. This loss prompted a national crisis in wildlife management. However, the government did not de-notify the reserve; instead, it launched a pioneering relocation project in 2008 to reintroduce tigers from Ranthambore, successfully restoring the species to the Alwar region's protected forests.

30. (2) II, III, I
The notification of tiger reserves in Rajasthan followed a specific chronological order. Ranthambore was one of the original reserves established at the launch of Project Tiger in 1973. Sariska was later added to the project in 1978. Mukundra Hills is a much more recent addition, having been officially notified as the state's third tiger reserve in 2013.

31. (3) IV only
Keoladeo Ghana National Park is a world-renowned wetland and Ramsar site in Bharatpur, historically used as a royal duck-shooting reserve. It features a diverse mosaic of habitats created through human intervention. While it hosts hundreds of bird species, it is not a breeding ground for the Great Indian Bustard, which prefers the arid grasslands of western Rajasthan instead.

32. (1) A-iii, B-iv, C-i, D-ii
Identifying the scientific names of Rajasthan's state symbols is crucial for biological studies. Khejri is Prosopis cineraria, and Rohida is Tecomella undulata. Among the fauna, the Chinkara is known as Gazella bennettii, while the Great Indian Bustard is scientifically classified as Ardeotis nigriceps. These names represent the formal classification of these ecologically significant species in the state.

33. (2) Jaisalmer
Tropical dry deciduous forests require a moderate amount of rainfall, typically between 50 cm and 100 cm. Jaisalmer, located in the extreme western part of Rajasthan, receives very low annual rainfall, usually less than 20 cm. Consequently, its vegetation is dominated by desert scrub and thorn forests rather than the deciduous species found in wetter eastern districts like Udaipur.

34. (1) Ranthambore National Park - Padam Talao
Padam Talao is a prominent lake located within Ranthambore National Park, often serving as a key location for tiger sightings and wildlife activity. In contrast, the other pairs are incorrect; Keoladeo is a wetland, not an Aravalli peak; the Desert National Park is characterized by sand dunes rather than a river gorge; and Mukundra Hills features ravines, not dunes.

35. (3) To allow genetic exchange and prevent tiger inbreeding.
Wildlife corridors are essential for the long-term survival of isolated animal populations. By connecting Ranthambore and Mukundra Hills, these corridors facilitate the natural movement and dispersal of tigers. This movement ensures genetic diversity through interbreeding between different groups, which prevents the negative effects of inbreeding depression and helps maintain a healthy, resilient population across the state's forest network.

36. (4) Subtropical Evergreen
The high-altitude slopes of Mount Abu experience a unique climatic regime within Rajasthan, characterized by cooler temperatures and higher rainfall. These conditions support subtropical evergreen forests, which are distinct from the arid and deciduous vegetation found elsewhere in the state. This area hosts a variety of moisture-loving species, including ferns and orchids, due to its specialized montane microclimate.

37. (1) I and II only
Desert National Park is the largest protected area in Rajasthan, covering the districts of Jaisalmer and Barmer. It protects a fragile ecosystem of shifting sand dunes, fossil beds, and rocky

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ANSWERS

1. (2) Rainfall
Rainfall is the primary determinant of vegetation in Rajasthan because of its vast arid and semi-arid landscapes. The state's diverse plant life, ranging from sparse desert scrub in the west to dry deciduous forests in the east, directly corresponds to the varying precipitation levels. Moisture availability dictates the physiological adaptations and distribution patterns of native flora.

2. (1) The leaves are broad and thin to maximize sunlight absorption.
Desert plants in Rajasthan possess specialized adaptations to survive extreme heat and moisture scarcity. Instead of broad and thin leaves, which would increase water loss through transpiration, these plants typically have small, thick, or spine-modified leaves. Other features include deep root systems and waxy coatings on stems, which effectively minimize water loss and maximize survival in aridity.

3. (1) A-ii, B-iii, C-i, D-iv
The distribution of forests in Rajasthan follows distinct climatic zones. Tropical thorn forests characterize the western arid region, while tropical dry deciduous forests dominate the eastern and south-eastern areas. Subtropical evergreen forests are localized to the high-altitude Mount Abu region. Finally, mixed deciduous forests are primarily found along the southern parts of the rugged Aravalli mountain range.

4. (4) Dominance of xerophytic plant species
Western Rajasthan experiences severe temperature fluctuations and minimal rainfall, creating a harsh environment for flora. This led to the dominance of xerophytic species, which are specifically adapted to conserve water. These plants often feature deep roots, fleshy stems for storage, and modified leaves, allowing them to flourish despite the limited moisture and high evaporative demands characteristic of deserts.

5. (1) I and II only
Tropical thorn forests are native to the arid and semi-arid parts of western Rajasthan, where rainfall remains extremely low. These plants possess thick bark and deep root systems to access groundwater and withstand heat. However, they do not require 150 cm of annual rainfall; instead, they thrive in regions receiving less than 50 cm of precipitation.

6. (2) Prosopis cineraria
Prosopis cineraria is the botanical name for the Khejri tree, which is designated as the State Tree of Rajasthan. This multipurpose species is vital for the desert's ecological balance and agricultural economy. It provides fodder, timber, and improves soil fertility through nitrogen fixation. Its cultural importance is deeply rooted in local traditions, especially within the bishnoi community.

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7. (4) They are dominated by thorny bushes and cacti.
Subtropical evergreen forests in Rajasthan are restricted to the high-altitude Mount Abu region. These areas receive the state's highest rainfall and maintain cooler temperatures, supporting species like mango, jamun, and bamboo. Unlike arid regions dominated by thorny bushes and cacti, these forests are characterized by dense greenery and higher humidity levels throughout the year due to unique microclimatic conditions.

8. (1) Both A and R are true and R is the correct explanation of A.
Subtropical evergreen forests are uniquely localized to Mount Abu because this region is the only part of Rajasthan that provides the necessary environmental conditions. The combination of high altitude and substantial annual rainfall creates a cool, moist microclimate suitable for these forests. Thus, the restricted distribution is a direct result of the specific climatic requirements of evergreen species.

blackbuck habitat, Sitamata has flying squirrels, and Chambal is dedicated to gharial conservation.

47. (1) Sariska - Ranthambore - Mukundra Hills
Geographically, Rajasthan's tiger reserves are distributed from north to south starting with Sariska in the Alwar district. Moving south, Ranthambore is located in the Sawai Madhopur district. Finally, Mukundra Hills is situated further south in the Kota and Jhalawar regions. This north-to-south alignment follows the eastern and southeastern belts of the state's forested and hilly landscapes.

48. (1) I, II, IV and V
Subtropical evergreen forests are rare in Rajasthan, covering less than 1% of the forest area and limited to Mount Abu's high altitudes. They thrive on rainfall exceeding 150 cm and feature dense undergrowth. Unlike deciduous forests, the species here do not shed all their leaves simultaneously, maintaining green cover throughout the year due to the consistent moisture and cooler temperatures.

49. (2) 1981
The Chinkara, or Indian Gazelle, was officially declared the State Animal of Rajasthan in the year 1981. This designation was part of an effort to highlight and protect the unique wildlife of the arid Thar Desert. The Chinkara is celebrated for its grace and its remarkable physiological ability to thrive in extremely dry conditions with very little water.

50. (1) A-iv, B-i, C-ii, D-iii
Each of Rajasthan's key fauna species has unique ecological adaptations. The Chinkara is a small antelope requiring very little water. The Great Indian Bustard is a heavy bird adapted to open arid grasslands. Tigers are the apex predators in deciduous forest ecosystems like Ranthambore. The Siberian crane was a famous migratory bird that depended on the wetland habitats of Bharatpur.

51. (3) It destroys habitats and blocks vital wildlife corridors.
The Aravalli range provides essential habitat and movement paths for many wildlife species. Unregulated stone mining leads to large-scale habitat destruction and the fragmentation of these hills. This blocks the natural wildlife corridors used by animals for migration and genetic exchange. Such disruptions increase human-wildlife conflict and lead to a significant decline in the local biodiversity of the region.

52. (1) Both A and R are true and R is the correct explanation of A.
Ranthambore National Park is considered a premier tiger habitat because it provides all the necessary ecological requirements. The park features a diverse landscape of dry deciduous forests for cover, grassy meadows for prey, and permanent water bodies like Padam Talao. This combination supports a high density of ungulates, ensuring a rich prey base that allows the tiger population to thrive.

53. (3) The canopy is dense, preventing sunlight from reaching the ground.
Tropical dry deciduous forests in Rajasthan are characterized by trees like Dhok and Tendu that shed their leaves in summer to conserve water. These forests grow in regions receiving 50-100 cm of rainfall. However, they do not have a dense canopy like rainforests; instead, the canopy is relatively open, allowing sunlight to reach the ground and support various grasses and shrubs.

54. (2) It was historically the hunting reserve of the Alwar State.
Before becoming a protected area, Sariska was the private hunting preserve of the Maharaja of Alwar. It was officially declared a wildlife sanctuary in 1955 and later became a tiger reserve under Project Tiger in 1978. Its history as a royal reserve helped preserve the forest cover and its wildlife population before modern conservation laws were enacted across India.

55. (1) I and II only
Wildlife conservation in Rajasthan is governed by the Wildlife (Protection) Act of 1972. Endangered species like the Great Indian Bustard are listed under Schedule I, providing them with the highest level of legal protection. Contrary to statement III, poaching or hunting any protected animal like the Chinkara is strictly illegal and punishable by law, regardless of religious festivals or traditions.

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iv. New fertile alluvial deposits
(1) A-ii, B-i, C-iii, D-iv
(2) A-i, B-ii, C-iv, D-iii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

37. All of the following are recognized methods for the reclamation and management of saline-alkaline soils in Rajasthan, except:
(1) Consistent and periodic application of gypsum
(2) Systematic cultivation of salt-tolerant crops
(3) Application of sodium-based fertilizers
(4) Leaching with high quality irrigation water source
(5) Question not attempted

38. Laterite soils have a very limited occurrence in Rajasthan. They are marginally found in which of the following regions?
(1) The arid tracts of Phalodi, Pokhran, and surrounding regions
(2) High rainfall regions near Mount Abu and parts of Banswara
(3) The extensive ravines of the lower Chambal river valley
(4) The saline depressions found around the Sambhar Lake area
(5) Question not attempted

39. Consider the following processes:
I. Intense leaching of silica
II. Accumulation of iron and aluminum oxides
III. Formation in regions of high temperature and alternating wet-dry seasons
Which combination correctly describes the formation mechanism of laterite soils?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

40. Which of the following is the most appropriate reason for laterite soils being generally considered poor for traditional agriculture?
(1) Basic nutrients like nitrogen and potassium are heavily leached
(2) They are prone to severe wind erosion during dry summer seasons
(3) They become exceptionally waterlogged after minor rainfall events
(4) They contain toxic levels of naturally occurring sodium carbonate
(5) Question not attempted

41. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Laterite soils are typically rich in iron and aluminum compounds.
Reason (R): Intense weathering and leaching processes remove soluble silica and basic salts from the soil profile.
In the context of the above statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

42. Identify the odd one out among the following soil types based on their maturity and profile development in Rajasthan:
(1) Lithosols (Skeletal Soils)
(2) Deep Alluvial River Soils
(3) Mature Vertisols (Black Soils)
(4) Aridisols (Western Desert Soils)
(5) Question not attempted

43. In pedological terms applicable to Rajasthan, 'Lithosols' primarily refer to:
(1) Highly saline soils found in internal drainage lake basins
(2) Deeply weathered soils rich in secondary silicate clay minerals
(3) Dark organic forest soils found in dense humid vegetation areas
(4) Shallow, stony skeletal soils with minimal profile development
(5) Question not attempted

44. Consider the following statements:
Statement I: Lithosols prominently dominate the steep slopes and foothills of the Aravalli range.
Statement II: These soils are highly mature and suitable for intensive mechanized farming.

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65. (1) I, II and IV
Desert plants in Rajasthan exhibit several xerophytic adaptations to survive in arid conditions. Succulent stems allow them to store water for long periods. Sunken stomata help reduce the rate of transpiration by shielding moisture from direct wind and heat. Furthermore, long taproot systems enable these plants to reach deep-seated groundwater, ensuring a steady water supply even when the surface soil is completely dry.

66. (1) Godawan (Great Indian Bustard)
The Godawan, or Great Indian Bustard, is a resident bird of Rajasthan's arid grasslands and does not undertake long-distance international migrations. In contrast, the Siberian Crane, Bar-headed Goose, and Great White Pelican are well-known migratory birds that travel thousands of miles to visit Rajasthan's wetlands during the winter months. Godawan is a permanent and iconic inhabitant of the Thar Desert ecosystem.

67. (1) A-ii, B-i, C-iv, D-iii
Key conservation milestones in Rajasthan occurred over several decades. Project Tiger was launched at Ranthambore in 1973-74. Keoladeo Ghana National Park received its UNESCO World Heritage status in 1985. The state officially designated the Chinkara as the State Animal in 1981, and the Khejri tree was recognized as the State Tree in 1983, formalizing the protection of these symbols.

68. (4) Tendu - Leaves used for making traditional bidis.
In Rajasthan, different tree species serve specific economic roles. The Tendu tree is particularly important because its leaves are harvested and used as wrappers for traditional bidis, providing a significant source of seasonal income for tribal communities. The other options are incorrect, as Babool is a thorn tree, Rohida is for timber, and Salar is primarily used for the packing and paper industry.

69. (2) 1973
Ranthambore National Park was among the first nine tiger reserves established across India when 'Project Tiger' was launched in 1973. This initiative was designed to protect the declining population of Bengal tigers and their habitats. Since then, Ranthambore has become one of the most famous tiger reserves in the world, known for its successful conservation efforts and high tiger density.

70. (2) Traditional Oran and Gochar land systems
Orans (sacred groves) and Gochars (community pastures) are traditional land management systems that have actually protected Rajasthan's biodiversity for centuries. These areas are governed by community rules that prohibit tree cutting and overexploitation. In contrast, threats like habitat fragmentation from roads, illegal poaching, and the erratic rainfall patterns caused by climate change significantly endanger the state's natural flora and fauna.

71. (4) The Thar Desert has a very low biodiversity index among global deserts.
Contrary to common belief, the Thar Desert is one of the most populated and biologically diverse deserts in the world. It hosts a wide variety of flora and fauna that have evolved unique survival strategies. While challenges like invasive species and grazing pressures exist, the desert's biodiversity index is relatively high compared to other global deserts, making it an ecological treasure rather than a barren wasteland.

72. (1) It suppressed native flora through invasion and competition.
The introduction of Prosopis juliflora, known locally as Vilayati Babool, was intended for greening arid areas. However, it became a highly invasive species. It competes aggressively with native plants for limited water and nutrients, eventually suppressing local flora. Its presence has altered habitats, as it does not support the same diversity of native wildlife or provide high-quality fodder compared to indigenous species like Khejri.

73. (3) Bharatpur Bird Sanctuary
Before it was upgraded to a National Park and renamed Keoladeo Ghana National Park, the area was globally recognized as the Bharatpur Bird Sanctuary. The name "Ghana" refers to the thick forest cover that once characterized this region. It has long been a destination for birdwatchers and scientists due to the incredible variety and density of avian species that congregate in its wetlands.

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74. (3) Statement I is correct but Statement II is incorrect.
The Aravalli range serves as a vital climatic barrier that limits the eastward expansion of the Thar Desert by blocking wind-blown sand. However, the vegetation on the western slopes is actually sparser and shorter because that side receives less rainfall. The eastern slopes, which receive more precipitation from the monsoon winds, support significantly denser and taller forest cover compared to the western side.

75. (4) Ramsar Site
The "Ramsar Site" designation specifically highlights Keoladeo National Park's international importance as a wetland habitat. The Ramsar Convention is an international treaty for the conservation and sustainable use of wetlands. Keoladeo was one of the first sites in India to be recognized for its role in supporting migratory waterbirds and maintaining a healthy, biodiverse wetland ecosystem in an arid state.

76. (2) It inhabits arid scrublands and eats rodents and insects.
The Desert Fox is a key fauna species of Rajasthan, primarily found in the arid and semi-arid scrublands of the Thar Desert. It is a highly adaptable carnivore, preying on small mammals like rodents, as well as insects and birds. Unlike animals that require perennial water, the desert fox is well-adapted to survive in dry environments with limited water sources.

77. (3) Xerophyte
A plant with a massive network of shallow roots for quick water absorption, fleshy stems for storage, and a thick waxy cuticle to prevent evaporation is a classic Xerophyte. These physiological and structural features are essential for survival in environments where water is scarce and evaporation rates are high, such as the desert and semi-arid regions found throughout most of Rajasthan.

78. (3) 2013
Mukundra Hills was officially declared as a Tiger Reserve in the year 2013, making it the third tiger reserve in Rajasthan after Ranthambore and Sariska. The reserve was created to provide an additional protected habitat for the dispersal of tigers from Ranthambore and to boost the long-term conservation of the species in the southeastern part of the state.

79. (1) It was the world's first successful relocation of tigers where they were extinct.
The Sariska tiger relocation programme, which began in 2008, was a major global conservation milestone. It marked the first time in the world that tigers were successfully relocated to a reserve where the species had become locally extinct. The project involved moving tigers from Ranthambore to Sariska using helicopters and intensive monitoring, proving that restoration of apex predators in lost habitats is possible.

80. (2) Mount Abu Wildlife Sanctuary
The Great Indian Bustard is a bird of the open dry grasslands. Its primary habitats in Rajasthan include the Desert National Park in Jaisalmer, the Sorsan region in Baran, and the Shokaliya area in Ajmer. Mount Abu Wildlife Sanctuary, however, is a high-altitude forest ecosystem with entirely different climatic and vegetation characteristics, making it an unsuitable and incorrect habitat for this grassland-dwelling species.

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CHAPTER 21
Soils

1. Which of the following is the most dominant factor influencing the formation of soils in the western region of Rajasthan?
(1) Underlying geological parent material
(2) Prevailing extreme climatic conditions
(3) Natural vegetation cover and leaf litter
(4) Topographical variations and slope gradient
(5) Question not attempted

2. Consider the following statements regarding soil formation in Rajasthan:
Statement I: The parent rock in the Hadoti plateau region is primarily basaltic.
Statement II: The weathering of this basaltic rock has led to the formation of widespread sandy desert soils.
Which of the following statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

3. Consider the following factors of soil formation:
I. Climate
II. Topography
III. Time
Which combination of the above represents the passive factors of soil formation in Rajasthan?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

4. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): The soils found on the slopes of the Aravalli ranges are generally shallow and stony.
Reason (R): The high slope gradient accelerates the removal of weathered rock materials through water erosion.
In the context of the above statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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5. Match the comprehensive soil orders of the USDA classification (List I) with their predominantly associated regions in Rajasthan (List II):
List I: (Soil Orders)
A. Aridisols
B. Alfisols
C. Vertisols
D. Inceptisols
List II: (Associated Regions)
i. Hadoti Plateau
ii. Eastern Plains
iii. Western Desert
iv. Flanks of the Aravallis
(1) A-iii, B-ii, C-i, D-iv
(2) A-iii, B-iv, C-i, D-ii
(3) A-ii, B-iii, C-iv, D-i
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

6. Which of the following statements regarding the traditional classification of soils in Rajasthan is incorrect?
(1) Retili soil is predominantly found throughout the arid western districts of the state.
(2) Lal-Pili soil's colour results from

56. (1) Jaisalmer and Barmer
The Desert National Park is an expansive protected area that covers approximately 3,162 square kilometers across the Jaisalmer and Barmer districts of western Rajasthan. This vast landscape is critical for preserving the Thar Desert's unique biodiversity, including sand dunes, scrub vegetation, and endangered species like the Great Indian Bustard and the desert fox, within a contiguous desert ecosystem.

57. (3) Open dry scrublands and undisturbed grasslands.
The Great Indian Bustard is a ground-nesting bird that specifically requires large, open, and undisturbed grasslands and dry scrublands. These habitats provide the necessary space for its elaborate mating displays and the concealment required for its nests. High-altitude forests, dense swamps, or steep rocky ravines are unsuitable for this bird, which is physiologically adapted for life on the open plains.

58. (1) A-i, B-ii, C-iii, D-iv
The type of vegetation in Rajasthan is closely tied to the amount of annual rainfall. True desert vegetation thrives in areas with less than 25 cm of rain. Tropical thorn forests appear in regions receiving 25 cm to 50 cm. Tropical dry deciduous forests dominate areas with 50 cm to 100 cm, while subtropical evergreen forests require high rainfall exceeding 150 cm.

59. (1) I, II and III
Mukundra Hills Tiger Reserve is named after the hills of the Vindhyan range in southeastern Rajasthan. It is noted for its biodiversity, including the rare Gagroni parrot found in the Jhalawar region. However, it does not consist of desert xeric vegetation; instead, the area is dominated by dry deciduous forests and riverine habitats along the Chambal River and its tributaries.

60. (2) II, III, I
In terms of geographical area coverage in Rajasthan, tropical thorn forests are the most widespread, dominating the vast western arid and semi-arid regions. Tropical dry deciduous forests occupy the second-largest area, primarily in the eastern and southeastern districts. Subtropical evergreen forests have the smallest footprint, as they are strictly localized to the high-altitude zone of the Mount Abu region.

61. (3) Banganga and Gambhiri
Keoladeo Ghana National Park is a man-made wetland that historically received its water from the Banganga and Gambhir rivers. These rivers fed the "Ajan Bund" system, which allowed for the seasonal flooding of the park's low-lying areas. This artificial water management is essential for maintaining the diverse aquatic habitats that support thousands of local and migratory birds throughout the year.

62. (4) The plants have deep taproots exclusively adapted to survive in loose desert sand.
The flora of Mount Abu is adapted to a cool, moist montane climate, not a sandy desert environment. It features a unique mix of evergreen species, orchids, and epiphytes that thrive in high humidity and higher rainfall. Deep taproots adapted for loose desert sand are characteristic of xerophytic plants in the Thar Desert, rather than the specialized vegetation found in Mount Abu.

63. (1) Afforestation using indigenous xerophytic species like Khejri and Rohida.
Sustainable sand dune stabilization and the fight against desertification in western Rajasthan are best achieved by planting native xerophytic species like Khejri, Rohida, and Phog. These plants are naturally adapted to the local climate and soil, requiring minimal water once established. Their root systems bind the sand, while their presence helps restore the ecological balance without the risks associated with water-intensive exotic species.

64. (3) Statement I is correct but Statement II is incorrect.
Khejri is an invaluable resource in Rajasthan; its dried pods, called Sangari, are a key component of the famous 'Panchkuta' vegetable dish. Contrary to statement II, Khejri is prized because it remains green even during the harshest summers and droughts. It provides essential fodder, known as 'Loong', for livestock when other food sources have withered, making it a "lifeline" tree.

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(2) II only
(3) III and V only
(4) II, III, and IV
(5) Question not attempted

14. What is the primary cause for the widespread formation of calcic horizons (kankar pans) in the subsurface of western Rajasthan's sandy soils?
(1) Continuous deposition of limestone dust particles by high-velocity wind storms
(2) Intense leaching of topsoil minerals during the short summer monsoon season
(3) Decomposition of ancient marine fossils trapped deep beneath the desert sand
(4) Evaporation leading to upward capillary movement of calcium solutions
(5) Question not attempted

15. In which of the following sets of districts are alluvial soils most extensively found in Rajasthan?
(1) Bharatpur, Dholpur, and Tonk
(2) Bikaner, Churu, and Jaisalmer
(3) Dungarpur, Banswara, and Pratapgarh
(4) Udaipur, Rajsamand, and Sirohi
(5) Question not attempted

16. In the context of the eastern plains of Rajasthan, the older alluvial soil deposits that are generally located above the present flood levels are known as:
(1) Khadar
(2) Bhangar
(3) Reh
(4) Kallar
(5) Question not attempted

17. Match the river basins of Rajasthan (List I) with the dominant soil types found within them (List II):
List I: (River Basins)
A. Luni Basin
B. Mahi Basin
C. Chambal Basin
D. Banas Basin
List II: (Dominant Soil Types)
i. Red Loam Soil
ii. Alluvial and Black Soil
iii. Brown Sandy Soil
iv. Yellowish Brown Soil
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iii, C-iv, D-i
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

18. Which of the following statements correctly describes the fertility profile of the alluvial soils in eastern Rajasthan?
(1) Rich in potash and lime but deficient in nitrogen and phosphorus
(2) Exceptionally rich in nitrogen but lacks adequate levels of potassium
(3) High concentration of organic humus but deficient in calcium minerals
(4) Heavily leached profiles, leaving only iron and aluminum oxide layers
(5) Question not attempted

19. Consider the following characteristics of soils:
I. Formed by fluvial deposition over thousands of years.
II. Capable of supporting intensive agriculture with proper irrigation.
III. Highly acidic in reaction with pH typically below 5.5.
Which combination is correct for the alluvial soils of eastern Rajasthan?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

20. Consider the following statements:
Statement I: Alluvial soils of Rajasthan are naturally rich in nitrogenous compounds.
Statement II: These soils have been deposited by the river systems of the state.
Which of the following statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

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unweathered calcium carbonate levels.
(3) Kali soil is concentrated in the south-eastern region and remains highly suitable for cotton.
(4) Bhuri soil is characteristic of the Banas river basin and semi-arid transitional plains areas.
(5) Question not attempted

7. Consider the following statements regarding Aridisols in Rajasthan:
I. They possess very low organic matter content.
II. They are primarily found in the districts of Kota and Bundi.
III. They frequently feature a calcic horizon at some depth.
IV. They are characterized by a coarse texture and high permeability.
Which combination of the above statements is correct?
(1) I, II, and III
(2) I, III, and IV
(3) II, III, and IV
(4) I, II, and IV
(5) Question not attempted

8. According to the comprehensive USDA soil taxonomy, which soil order occupies the largest geographical area in Rajasthan?
(1) Entisols
(2) Alfisols
(3) Vertisols
(4) Inceptisols
(5) Question not attempted

9. Which of the following pairs of soil type and its prominent occurrence district is correctly matched?
(1) Red Loam Soil - Jaisalmer
(2) Desert Sandy Soil - Banswara
(3) Deep Black Soil - Jhalawar
(4) Yellowish Brown Soil - Barmer
(5) Question not attempted

10. Desert sandy soils in western Rajasthan are pedologically characterized primarily by which of the following properties?
(1) Sandy and loamy sand textures with weak profile development
(2) High proportion of clay particles and self-mulching capacity in deep profiles
(3) Excessive accumulation of iron and aluminum oxides in the subsurface layers
(4) Deep, dark-coloured horizons rich in decomposed organic humus and minerals
(5) Question not attempted

11. Match the sub-classifications of sandy soils (List I) with their prominent characteristics or locations in Rajasthan (List II):
List I: (Sub-classification)
A. Sandy Dune Soil
B. Calcic Brown Sandy Soil
C. Gypsiferous Sandy Soil
D. Saline Sandy Soil
List II: (Characteristics/Locations)
i. Sub-surface hardpan of calcium carbonate
ii. Found in depressions of Luni basin and Ghaggar bed
iii. Mobile and devoid of distinct soil horizons
iv. Presence of subsurface calcium sulphate layer
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-iv, C-i, D-ii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

12. All of the following are typical chemical characteristics of the desert sandy soils of the Thar region, except:
(1) High concentration of soluble salts
(2) Elevated levels of available nitrogen
(3) Adequate to high presence of calcium
(4) Generally alkaline pH reaction
(5) Question not attempted

13. Consider the following statements regarding the soils of the Thar desert:
I. They suffer from severe wind erosion.
II. Their moisture retention capacity is extremely high.
III. They are generally deficient in phosphorus and organic carbon.
IV. Their formation is dominated by physical weathering processes.
V. Capillary action in these soils often leads to surface salinity.
Which combination of the above statements is incorrect?
(1) I and IV only

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(2) II, III, and IV
(3) I, II, and IV
(4) I, III, and IV
(5) Question not attempted

29. Which of the following statements about the Black soils of the Hadoti region is incorrect?
(1) Rich in calcium carbonate, magnesium, and essential potash minerals
(2) Formed from the weathering and breakdown of volcanic basaltic rocks
(3) Highly frequent irrigation needed due to low water retention
(4) Self-ploughing characteristic due to the shrinking and swelling action
(5) Question not attempted

30. Consider the following soil textural classes found in Rajasthan:
I. Clayey soil
II. Sandy soil
III. Silty soil
IV. Loamy soil
Arrange the above classes in the increasing order of their inherent water retention capacity:
(1) II, IV, III, I
(2) I, III, IV, II
(3) II, III, IV, I
(4) IV, II, III, I
(5) Question not attempted

31. The characteristic shrink-swell behavior of the black soils in the Kota and Bundi districts is primarily due to the dominance of which clay mineral?
(1) Montmorillonite
(2) Kaolinite
(3) Illite
(4) Chlorite
(5) Question not attempted

32. Which of the following pairs of soil type and its highly suitable commercial crop in Rajasthan is incorrectly matched?
(1) Black Soil - Long Staple Cotton
(2) Red Loam Soil - Sugarcane
(3) Desert Sandy Soil - Moth Bean
(4) Black Soil - Commercial Soybean
(5) Question not attempted

33. Saline and alkaline soils in Rajasthan are defined pedologically by the presence of:
(1) Extremely high organic matter content leading to acidic conditions
(2) Accumulation of soluble salts like sodium chlorides and sulfates
(3) Deep, unweathered layer of granitic bedrock near the ground surface
(4) Unusually high concentration of unoxidized iron ores and minerals
(5) Question not attempted

34. Consider the following conditions:
I. Faulty agricultural practices and over-irrigation
II. High rate of evaporation in arid climates
III. Inadequate surface and subsurface drainage
IV. Capillary upward movement of water
V. Heavy application of organic farmyard manure
Which combination of the above contributes significantly to the development of soil salinity in Rajasthan?
(1) I, II, III, and V
(2) I, II, III, and IV
(3) II, III, IV, and V
(4) I, III, IV, and V
(5) Question not attempted

35. The upward movement of groundwater carrying dissolved salts to the surface layer, which subsequently evaporates leaving a white saline crust, is a result of:
(1) Leaching action
(2) Podzolization
(3) Capillary action
(4) Laterization
(5) Question not attempted

36. Match the local terminologies used for problem soils in Rajasthan (List I) with their meanings (List II):
List I: (Local Terminology)
A. Reh
B. Sem
C. Bhur
D. Khadar
List II: (Meaning)
i. Waterlogged areas in canal commands
ii. Saline efflorescence on the soil surface
iii. Elevated sandy tracts along river banks

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21. Identify the odd one out among the following districts based on the absence of significant alluvial soil cover:
(1) Alwar
(2) Dausa
(3) Jaisalmer
(4) Sawai Madhopur
(5) Question not attempted

22. Red and yellow soils in Rajasthan are predominantly concentrated in the districts of:
(1) Ganganagar, Hanumangarh, and Churu
(2) Sawai Madhopur, Bhilwara, and Ajmer
(3) Jodhpur, Nagaur, Pali, and Jalore
(4) Churu, Sikar, Jhunjhunu, and Alwar
(5) Question not attempted

23. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Certain soils in the transitional plains of Sawai Madhopur and Bhilwara display a distinct yellow color.
Reason (R): Ferric oxides present in these soils undergo a process of hydration in regions of intermediate rainfall.
In the context of the above statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

24. The characteristic red color of the red loam soils found in southern Rajasthan is most appropriately attributed to:
(1) The diffusion of iron in crystalline and metamorphic rocks
(2) The extensive accumulation of decomposed forest leaf litter
(3) The deposition of red sandstone dust by wind storms
(4) The high concentration of water-soluble sodium salts
(5) Question not attempted

25. Match the soil colours (List I) with their primary causative chemical compounds or conditions (List II):
List I: (Soil Colours)
A. Deep Black
B. Red
C. Yellow
D. White/Grey patches
List II: (Causative Factor)
i. Hydration of iron oxides
ii. Accumulation of surface salts
iii. Unhydrated ferric oxides
iv. Titaniferous magnetite and clay-humus complex
(1) A-iv, B-iii, C-i, D-ii
(2) A-iv, B-i, C-iii, D-ii
(3) A-iii, B-iv, C-ii, D-i
(4) A-ii, B-iii, C-i, D-iv
(5) Question not attempted

26. A farmer in Banswara district is planning his Kharif sowing on well-drained red loam soil. Based on the soil properties, which of the following crops is most conceptually suited and traditionally cultivated in this region?
(1) Maize
(2) Pearl Millet (Bajra)
(3) Mustard
(4) Cumin
(5) Question not attempted

27. Black (Regur) soils in Rajasthan are predominantly found in the:
(1) Shekhawati region
(2) Marwar region
(3) Mewat region
(4) Hadoti region
(5) Question not attempted

28. Consider the following characteristics regarding Vertisols (Black soils) in Rajasthan:
I. They develop deep cracks during hot dry periods.
II. They possess high moisture-retention capacity.
III. They are texturally classified as sandy loams.
IV. They expand and become sticky when wet.
Which of the following combinations identifies the correct characteristics?
(1) I, II, and III

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Which of the following statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

45. Match the physiological features of Rajasthan (List I) with their dominant soil classes (List II):
List I: (Physiological Features)
A. Aravalli Hills
B. Hadoti Plateau
C. Eastern River Plains
D. Western Sandy Plains
List II: (Soil Classes)
i. Alfisols
ii. Aridisols
iii. Vertisols
iv. Lithosols/Inceptisols
(1) A-iv, B-iii, C-i, D-ii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-i, C-iii, D-ii
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

46. Which of the following statements regarding the Lithosols of the Aravalli region is incorrect?
(1) They exhibit a very shallow soil depth.
(2) They are characterized by a high presence of gravel and unweathered rock fragments.
(3) They are highly susceptible to runoff and water erosion.
(4) They have excellent water-holding capacity and deep organic topsoil.
(5) Question not attempted

47. A forest department official planning an afforestation drive on the Lithosols of the Aravalli slopes must select plant species primarily adapted to which of the following constraints?
(1) Shallow rooting depth and low moisture retention
(2) Prolonged waterlogging and poor soil aeration
(3) High levels of toxic exchangeable sodium salts
(4) Extremely acidic soil pH levels in the profile
(5) Question not attempted

48. Brown soils, known for supporting significant Kharif and Rabi agriculture in the semi-arid transitional zones, are characteristically found in the basin of which river?
(1) Luni
(2) Banas
(3) Ghaggar
(4) Som
(5) Question not attempted

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49. Consider the following features of reddish-brown soils in Rajasthan:
I. They are predominantly found in Jalore, Pali, and Nagaur.
II. They have a sandy loam to clay loam texture.
III. They are virtually devoid of calcium carbonate.
IV. Their nitrogen content is naturally very high.
Which combination of the above statements is incorrect?
(1) I and II only
(2) III and IV only
(3) I, III, and IV
(4) II, III, and IV
(5) Question not attempted

50. In which of the following sets of districts is the 'Brown Sandy' soil predominantly distributed?
(1) Jodhpur, Pali, Nagaur, and Sikar
(2) Jaisalmer, Barmer, and Bikaner
(3) Kota, Baran, Bundi, and Jhalawar
(4) Udaipur, Dungarpur, and Banswara
(5) Question not attempted

51. Match the modern USDA soil classifications (List I) with the Rajasthan districts where they are prominently found (List II):
List I: (USDA Soil Classification)
A. Entisols
B. Inceptisols
C. Alfisols
D. Vertisols
List II: (Districts)
i. Jhalawar, Baran
ii. Jaipur, Dholpur
iii. Jaisalmer, Bikaner

ANSWERS

1. (2) Prevailing extreme climatic conditions
In the arid western plains of Rajasthan, the prevailing extreme climatic conditions, characterized by high temperatures and scanty rainfall, act as the most dominant factor in soil formation. These conditions facilitate intense physical weathering and minimize organic accumulation. Consequently, the resulting soils are predominantly sandy with poor profile development and low fertility levels throughout the entire desert region.

2. (3) Statement I is correct but Statement II is incorrect
The Hadoti plateau region is geologically defined by basaltic parent rock originating from ancient volcanic activity. While the weathering of this basalt creates deep, fertile black soils known for their clayey texture, it does not produce sandy desert soils. Sandy soils are instead characteristic of the western arid regions where aeolian processes and different parent materials dominate the landscape.

3. (2) II and III only
Soil formation involves both active and passive factors. In the context of Rajasthan, topography and time are considered passive factors because they provide the physical framework and duration for pedogenesis without providing energy. In contrast, climate and biological organisms are active factors. Topography influences water runoff and erosion, while time determines the overall maturity and development of soil horizons.

4. (1) Both A and R are true and R is the correct explanation of A.
The Aravalli ranges feature steep gradients that significantly influence soil characteristics. High slopes accelerate the velocity of surface runoff during rains, leading to the rapid removal of weathered materials. This continuous water erosion prevents the accumulation of deep soil layers, resulting in the presence of shallow, stony, and skeletal soils that are typically found throughout these prominent hilly terrains.

5. (1) A-iii, B-ii, C-i, D-iv
The USDA soil taxonomy classifies Rajasthan's diverse pedological landscape into specific orders. Aridisols are characteristic of the western desert's dry climate, while Alfisols dominate the mature eastern plains. Vertisols, known for high clay content, are found in the south-eastern Hadoti plateau. Inceptisols, representing soils with minimal development, are frequently observed along the flanks and slopes of the Aravalli range.

6. (2) Lal-Pili soil's colour results from unweathered calcium carbonate levels.
Traditional soil classification in Rajasthan identifies various types based on appearance and properties. Red and yellow soils derive their distinct coloration from the hydration and oxidation of iron minerals within the profile, rather than levels of unweathered calcium carbonate. In contrast, black soils are noted for their suitability for cotton, and brown soils characterize the semi-arid Banas river basin.

7. (2) I, III, and IV
Aridisols are the dominant soil order in the arid regions of Rajasthan, characterized by a lack of moisture and very low organic matter. They often feature a calcic horizon at varying depths due to the accumulation of carbonates. These soils typically have a coarse, sandy texture and high permeability, allowing water to drain quickly without developing deep or mature profiles.

8. (1) Entisols
In the comprehensive USDA soil taxonomy applied to Rajasthan, Entisols occupy the largest geographical area across the state. These are youthful soils with little to no evidence of horizon development. They are predominantly found in the vast western sandy plains where active wind deposition and shifting sand dunes prevent the formation of mature, well-defined soil layers within the profile.

9. (3) Deep Black Soil - Jhalawar
Deep black soils, also known as Regur, are predominantly found in the south-eastern Hadoti

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60. Consider the following statements:
Statement I: Sheet erosion is often unnoticed by farmers as it removes soil evenly across a slope.
Statement II: It involves the continuous removal of the most fertile topsoil layer.
Which of the following statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

61. Consider the following districts of Rajasthan:
I. Dholpur
II. Sawai Madhopur
III. Kota
Which combination of the above districts is severely affected by gully erosion along the Chambal River?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

62. The primary pedological and geographical reason for the extensive formation of ravines in the Chambal basin is most appropriately described as:
(1) High salinity of the soil combined with continuous wind action
(2) The underlying hard granite rock forcing persistent surface runoff
(3) Subsidence of underground limestone caverns in the lower basin
(4) Deep alluvial profile, steep gradients, and seasonal flash floods
(5) Question not attempted

63. A farmer in the undulating terrains of Dungarpur wishes to minimize water erosion on his sloping fields. Which of the following is the best agronomic practice he should adopt?
(1) Contour farming
(2) Clean cultivation
(3) Cultivation along the slope
(4) Deep summer ploughing
(5) Question not attempted

64. Consider the following soil conservation measures:
I. Contour bunding
II. Bench terracing
III. Crop rotation
IV. Construction of check dams
Which combination accurately represents the mechanical measures of soil conservation?
(1) I, II, and III
(2) II, III, and IV
(3) I, II, and IV
(4) I, III, and IV
(5) Question not attempted

65. Match the soil conservation practices (List I) with their corresponding definitions (List II):
List I: (Conservation Practice)
A. Mulching
B. Strip Cropping
C. Shelterbelts
D. Contour Bunding
List II: (Definition)
i. Growing alternating bands of erosion-resisting and erosion-permitting crops
ii. Planting rows of trees transverse to the prevailing wind direction
iii. Covering bare soil with organic material to retain moisture
iv. Constructing earthen embankments across the slope
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

66. Identify the odd one out among the following measures, as it is classified primarily as an agrostological (biological) measure rather than a mechanical one:
(1) Grassed waterways
(2) Gabion structures
(3) Percolation tanks
(4) Drop spillways
(5) Question not attempted

67. The Central Arid Zone Research Institute (CAZRI), which plays a pivotal role in

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land degradation challenges faced by farmers in different geographic regions.

37. (3) Application of sodium-based fertilizers
The reclamation of saline-alkaline soils involves reducing salt concentration and improving soil structure. Methods include applying gypsum to displace sodium, leaching the profile with high-quality water, and growing salt-tolerant crops. However, the application of sodium-based fertilizers is not a reclamation method; instead, it would worsen the alkalinity and salinity problems, further degrading the soil's physical and chemical properties.

38. (2) High rainfall regions near Mount Abu and parts of Banswara
Laterite soils have a very restricted presence in Rajasthan because they require high rainfall and specific temperature patterns for formation. They are marginally found in the high-altitude, high-rainfall areas near Mount Abu and certain parts of Banswara. These soils are not typical of the arid desert, the saline depressions, or the deep ravines found in other parts of the state.

39. (4) I, II, and III
Laterite soils form through a process involving the intense leaching of silica and the subsequent accumulation of iron and aluminum oxides. This occurs in regions with high temperatures and distinct alternating wet and dry seasons. The heavy rainfall washes away soluble minerals, leaving behind a residual soil that is rich in oxides but generally deficient in basic plant nutrients and organic matter.

40. (1) Basic nutrients like nitrogen and potassium are heavily leached
Laterite soils are generally poor for traditional agriculture because the intense leaching process removes essential basic nutrients like nitrogen, potassium, and calcium from the profile. This leaves the soil acidic and nutrient-deficient. While they are rich in iron and aluminum, their lack of fertility and poor organic content make them challenging for crop production without heavy fertilization and careful management.

41. (1) Both A and R are true and R is the correct explanation of A.
Laterite soils are characterized by high concentrations of iron and aluminum compounds, which give them their typical reddish color. This enrichment occurs because intense weathering and leaching remove soluble silica and basic salts from the soil profile. Consequently, the relatively insoluble oxides of iron and aluminum remain as residues, forming the primary mineral components of these highly weathered tropical soils.

42. (1) Lithosols (Skeletal Soils)
Lithosols, also known as skeletal soils, are the odd one out among the listed types because they are immature and lack a well-developed soil profile. While alluvial soils, Vertisols, and even many Aridisols have recognizable horizons and a degree of maturity, Lithosols consist mainly of unweathered rock fragments and thin soil layers, typically found on steep slopes where erosion exceeds pedogenesis.

43. (4) Shallow, stony skeletal soils with minimal profile development
In the pedology of Rajasthan, Lithosols are defined as shallow, stony skeletal soils that exhibit minimal profile development. They are primarily composed of partially weathered rock fragments and gravel. These soils are typically found on steep slopes and hilly terrains, where the thin layer of soil is insufficient to support deep-rooted plants or sustain intensive agricultural practices without significant intervention.

44. (3) Statement I is correct but Statement II is incorrect
Lithosols are prominently found on the steep slopes and foothills of the Aravalli range in Rajasthan. These soils are characterized by their shallow depth and high gravel content, making them immature and unsuitable for intensive mechanized farming. Their skeletal nature and location on high gradients mean they have low water-holding capacity and are highly susceptible to continuous erosion by rainwater.

45. (1) A-iv, B-iii, C-i, D-ii
Rajasthan's physiological features are dominated by specific soil classes. The Aravalli Hills feature shallow Lithosols and Inceptisols, while

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75. Which of the following statements regarding the Soil Health Card scheme in Rajasthan is incorrect?
(1) It is issued to farmers once every 2 to 3 years.
(2) It evaluates physical parameters such as pH and Electrical Conductivity.
(3) It provides crop-wise recommendations for appropriate fertilizer dosages.
(4) It tests soil strictly for three macronutrients only.
(5) Question not attempted

76. In which year was the flagship Soil Health Card scheme officially launched in Rajasthan?
(1) 2012
(2) 2015
(3) 2014
(4) 2017
(5) Question not attempted

77. Consider the following statements about soil management initiatives:
Statement I: The Soil Health Card promotes the balanced use of chemical fertilizers and integrates organic manures.
Statement II: This targeted approach helps reduce the overall input cost for farmers and prevents further soil degradation.
Which of the following statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

78. Which of the following pairs of nutrient category and specific element tested under the Soil Health Card scheme is correctly matched?
(1) Primary Macronutrient - Zinc
(2) Micronutrient - Phosphorus
(3) Physical Parameter - Boron
(4) Secondary Nutrient - Sulphur
(5) Question not attempted

79. A farmer in Pali district receives a Soil Health Card indicating that his soil has a highly alkaline pH (above 9.0) and high exchangeable sodium percentage. Which of the following amendments will the card most likely recommend applying before the monsoon?
(1) Gypsum
(2) Lime
(3) Urea
(4) Muriate of Potash
(5) Question not attempted

80. What is the official motto or theme associated with the Soil Health Card scheme introduced to improve soil management in states like Rajasthan?
(1) Har Khet Ko Pani
(2) Swasth Dhara, Khet Hara
(3) Per Drop More Crop
(4) Mera Gaon, Mera Gaurav
(5) Question not attempted

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However, they are typically deficient in nitrogen and phosphorus, requiring the supplementary application of fertilizers for optimal crop yields. Their fine-grained texture allows for good moisture retention compared to sandy desert soils.

19. (1) I and II only
Alluvial soils in the eastern plains are formed through fluvial deposition over thousands of years, making them highly productive for agriculture. They respond well to intensive farming when supported by irrigation. Unlike acidic soils, these alluvial deposits are generally neutral to slightly alkaline in reaction, providing a favorable environment for the cultivation of a wide variety of food and commercial crops.

20. (4) Statement I is incorrect but Statement II is correct
Alluvial soils in Rajasthan have been deposited over long periods by the state's river systems, particularly in the eastern regions. While these soils are structurally sound and productive, they are not naturally rich in nitrogenous compounds. Like most Indian soils, they are characteristically deficient in nitrogen and organic matter, necessitating the use of external fertilizers for sustained agricultural productivity.

21. (3) Jaisalmer
Among the listed districts, Jaisalmer is the odd one out regarding soil types. While Alwar, Dausa, and Sawai Madhopur are part of the eastern plains and feature significant alluvial soil cover deposited by rivers, Jaisalmer is located deep within the Thar Desert. Its landscape is dominated by desert sandy soils and shifting dunes rather than fluvial alluvial deposits.

22. (2) Sawai Madhopur, Bhilwara, and Ajmer
Red and yellow soils are predominantly concentrated in the transitional zones of Rajasthan. These soils are most commonly found in districts such as Sawai Madhopur, Bhilwara, and Ajmer. Their distribution is linked to the weathering of crystalline and metamorphic rocks in regions receiving intermediate rainfall, where the hydration and oxidation states of iron minerals determine the soil's distinct color.

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23. (1) Both A and R are true and R is the correct explanation of A.
The distinct yellow color observed in the soils of Sawai Madhopur and Bhilwara is a result of chemical processes acting on iron minerals. When ferric oxides present in the soil undergo hydration under conditions of intermediate rainfall, they transition from red to yellow. This pedogenic process is common in regions where moisture levels are sufficient to cause hydration but not leaching.

24. (1) The diffusion of iron in crystalline and metamorphic rocks
Red loam soils in southern Rajasthan derive their characteristic color from the diffusion of iron minerals found in the underlying crystalline and metamorphic rocks. As these rocks weather, iron is released and oxidized, spreading through the soil mass. This process gives the soil its reddish hue, which is distinct from the colors caused by organic matter accumulation or wind-blown sand deposits.

25. (1) A-iv, B-iii, C-i, D-ii
Soil colors are determined by specific chemical compounds and environmental conditions. Deep black color arises from titaniferous magnetite and clay-humus complexes. Red is caused by unhydrated ferric oxides, whereas yellow results from the hydration of those oxides. White or grey patches on the surface indicate the accumulation of soluble salts, often seen in saline soils due to upward capillary action.

26. (1) Maize
Red loam soils, predominantly found in the Banswara district of southern Rajasthan, are well-drained and suitable for specific crops. Maize is conceptually and traditionally the most suited crop for this region due to the soil's moisture characteristics and the local climate. While other crops are grown elsewhere, maize remains a staple and a primary Kharif crop in these red-loamed areas.

27. (4) Hadoti region
Black soils, also known as Regur soils, are predominantly found in the south-eastern part of Rajasthan, specifically within the Hadoti region. This area includes districts like Kota, Bundi, Baran, and Jhalawar. These soils are formed from

region of Rajasthan. Districts like Jhalawar, Kota, and Baran are characterized by these soils, which originate from the weathering of basaltic lava. They are noted for their high clay content and moisture retention, making them highly suitable for intensive crops like soybean and cotton.

10. (1) Sandy and loamy sand textures with weak profile development
The desert sandy soils covering western Rajasthan are characterized by sandy to loamy sand textures. These soils exhibit very weak profile development due to the arid environment and constant wind action. They possess a single-grained structure, low water-holding capacity, and minimal organic matter, reflecting their youth and the dominance of physical weathering over chemical or biological pedogenic processes.

11. (1) A-iii, B-i, C-iv, D-ii
The desert landscape features specialized sandy soil variations. Sandy dune soils are mobile and lack distinct horizons, while calcic brown sandy soils contain a subsurface hardpan of calcium carbonate. Gypsiferous sandy soils are identified by a calcium sulphate layer, and saline sandy soils are typically found in low-lying depressions such as the Luni basin and the ancient Ghaggar bed.

12. (2) Elevated levels of available nitrogen
The soils of the Thar Desert possess specific chemical properties influenced by aridity. They generally exhibit an alkaline pH and contain high concentrations of soluble salts and calcium minerals. However, they are consistently deficient in available nitrogen and organic matter. The lack of dense vegetation and rapid decomposition under high temperatures prevent the accumulation of nitrogenous compounds in these soil profiles.

13. (2) II only
Soils in the Thar Desert are characterized by low moisture retention capacity due to their coarse sandy texture and high porosity. They are highly susceptible to wind erosion and are typically adequate in phosphorus but deficient in nitrogen and organic carbon. While physical weathering dominates their formation and capillary action often brings salts to the surface, their ability to hold water remains naturally very poor.

14. (4) Evaporation leading to upward capillary movement of calcium solutions
The formation of subsurface kankar pans or calcic horizons in western Rajasthan is primarily driven by the upward capillary movement of water. In this arid climate, groundwater containing dissolved calcium minerals moves toward the surface. As the water evaporates due to high temperatures, the minerals precipitate and accumulate at a certain depth, eventually hardening into a distinct and stony subsurface layer.

15. (1) Bharatpur, Dholpur, and Tonk
Alluvial soils are most extensively distributed across the eastern and north-eastern parts of Rajasthan, where river systems have deposited fertile sediments. Districts such as Bharatpur, Dholpur, and Tonk feature these productive soils. They are characterized by a fine to medium texture and are capable of supporting intensive agriculture, provided there is adequate irrigation and proper organic nutrient management.

16. (2) Bhangar
In the riverine plains of eastern Rajasthan, older alluvial deposits situated above the current flood levels are referred to as Bhangar. Unlike the newer, frequently replenished Khadar soils found in active floodplains, Bhangar soils are more stable and often contain calcareous concretions known as kankar. They are generally less fertile than Khadar but still support significant and productive agricultural activity.

17. (1) A-iii, B-i, C-ii, D-iv
Soil types in Rajasthan vary significantly across different river basins. The Luni basin is characterized by brown sandy soils, while the Mahi basin features red loam. The Chambal basin is dominated by a mix of alluvial and black soils due to its unique topography and parent material. The Banas basin is primarily associated with yellowish-brown soils throughout its entire geographic course.

18. (1) Rich in potash and lime but deficient in nitrogen and phosphorus
The alluvial soils found in eastern Rajasthan possess a distinct fertility profile. They are naturally rich in essential minerals like potash and lime, which are beneficial for plant growth.

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researching soil conservation and desertification control in Rajasthan, is headquartered in:
(1) Bikaner
(2) Jaisalmer
(3) Jodhpur
(4) Jaipur
(5) Question not attempted

68. The severe form of land degradation caused by prolonged waterlogging, particularly evident in the Indira Gandhi Canal Project (IGNP) command area, is locally termed as:
(1) Chaupan problem
(2) Usar problem
(3) Kallar problem
(4) Sem problem
(5) Question not attempted

69. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Significant tracts of agricultural land in the IGNP command area are turning unproductive due to waterlogging and salinity.
Reason (R): Over-irrigation combined with the presence of a subsurface hardpan of gypsum severely restricts deep percolation, raising the water table.
In the context of the above statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

70. Which of the following statements about the 'Sem' problem in Rajasthan is correct?
(1) It is mainly confined to the naturally arid districts of Jaisalmer and Barmer without canal access.
(2) It is biologically resolved by planting high-water-consuming species like Eucalyptus.
(3) It results from the excessive depletion of groundwater via tube wells.
(4) It fundamentally improves the nitrogen fixation capacity of the soil.
(5) Question not attempted

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71. Consider the following human activities:
I. Excessive use of chemical fertilizers
II. Intensive canal irrigation without drainage
III. Unregulated mining in the Aravallis
IV. Deforestation for expanding agriculture
V. Adoption of organic farming
Which combination of the above activities acts as major drivers of land degradation in Rajasthan?
(1) I, II, III, and V
(2) I, II, III, and IV
(3) II, III, IV, and V
(4) I, III, IV, and V
(5) Question not attempted

72. In parts of Bikaner and Hanumangarh, the presence of an impervious hardpan just a few meters below the soil surface directly causes which of the following effects when subjected to heavy surface irrigation?
(1) Perched water table leading to immediate waterlogging
(2) Rapid leaching of soil nutrients into the deep aquifers
(3) Subsidence of the land surface creating deep craters
(4) Spontaneous combustion of underground organic peat
(5) Question not attempted

73. Select the correct sequence of generalized soil pH values representing Acidic, Neutral, Saline, and Alkaline soils respectively:
(1) <6.5, 6.5-7.5, <8.5 (with high EC), >8.5 (with high ESP)
(2) >8.5, 6.5-7.5, <6.5, 7.5-8.5
(3) 6.5-7.5, <6.5, >8.5, <8.5
(4) <6.5, >8.5, 6.5-7.5, <8.5
(5) Question not attempted

74. The national "Soil Health Card" scheme, which evaluates soil fertility and recommends balanced fertilizer use, was historically launched by the Prime Minister in Rajasthan from:
(1) Suratgarh, Sri Ganganagar
(2) Nokha, Bikaner
(3) Phalodi, Jodhpur
(4) Bassi, Jaipur
(5) Question not attempted

the weathering of basaltic rocks and are highly valued for their ability to retain moisture and support productive crops like cotton and soybean.

28. (3) I, II, and IV
Vertisols, or black soils, exhibit unique physical properties. They have a high moisture-retention capacity and expand significantly when wet, becoming very sticky. During hot, dry periods, they shrink and develop deep cracks, which aids in natural soil aeration. Unlike sandy loams, these soils are heavy and clayey, making them difficult to manage during the transition between wet and dry seasons.

29. (3) Highly frequent irrigation needed due to low water retention
The black soils of the Hadoti region are formed from volcanic basaltic rocks and are rich in calcium carbonate and potash. One of their most significant characteristics is their exceptionally high water-holding capacity, which reduces the frequency of irrigation needed compared to sandy soils. They also exhibit self-ploughing behavior as they shrink and swell, creating deep and characteristic vertical cracks.

30. (1) II, IV, III, I
The water retention capacity of soil is primarily determined by its texture and pore space. Sandy soils have the lowest retention due to large pores. Loamy soils have intermediate retention, followed by silty soils. Clayey soils, characterized by very fine particles and small pores, possess the highest inherent capacity to hold water, making them the most moisture-retentive among all classes.

31. (1) Montmorillonite
The shrink-swell behavior characteristic of black soils in Kota and Bundi is caused by the dominance of the montmorillonite clay mineral. This specific type of silicate clay has a lattice structure that expands when water enters the layers and contracts upon drying. This mineralogical property is responsible for the deep cracks and the high plasticity observed in these heavy soils.

32. (2) Red Loam Soil - Sugarcane
While black soils are excellent for cotton and soybean, and desert sandy soils support hardy crops like moth bean, the pairing of red loam soil with sugarcane is traditionally incorrect for Rajasthan. Red loams in the south are better suited for maize. Sugarcane typically requires deeper, more fertile alluvial or heavy soils with very high water availability and nutrient levels.

33. (2) Accumulation of soluble salts like sodium chlorides and sulfates
In Rajasthan, saline and alkaline soils are pedologically defined by the excessive accumulation of soluble salts, including sodium chlorides and sulfates. These salts often form a white crust on the surface. These conditions typically arise in areas with poor drainage and high evaporation rates, leading to chemical imbalances that hinder plant growth and degrade the overall productive capacity of the land.

34. (2) I, II, III, and IV
The development of soil salinity in Rajasthan is driven by several presidential factors, including faulty agricultural practices and over-irrigation. High evaporation rates in arid climates cause dissolved salts to rise through capillary action. When coupled with inadequate surface and subsurface drainage, these salts accumulate in the topsoil. While organic manure is beneficial, these other physical and climatic factors are the primary drivers.

35. (3) Capillary action
The phenomenon where groundwater carrying dissolved salts moves upward to the topsoil layer is known as capillary action. In arid environments, high surface temperatures cause rapid evaporation, leaving behind a white, saline crust of minerals. This process is a major cause of soil degradation in regions with high water tables or excessive irrigation, eventually making the land unproductive for farming.

36. (1) A-ii, B-i, C-iii, D-iv
Local terminologies in Rajasthan describe various soil problems. 'Reh' refers to saline efflorescence on the surface, while 'Sem' denotes waterlogged conditions common in canal areas. 'Bhur' describes elevated sandy tracts found along river banks, and 'Khadar' represents fertile, new alluvial deposits. Understanding these terms is essential for identifying the specific

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(1) A-iii, B-iv, C-ii, D-i
(2) A-iv, B-iii, C-i, D-ii
(3) A-iii, B-ii, C-iv, D-i
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

52. Which of the following pairs of brown soil characteristic and its related fact is correctly matched?
(1) Base saturation - Extremely low due to heavy rainfall
(2) Texture - Predominantly heavy clay
(3) Occurrence - Strictly confined to the humid southern plains
(4) Phosphorus status - Generally adequate for crop growth
(5) Question not attempted

53. The extreme susceptibility of western Rajasthan to wind erosion is primarily a direct effect of:
(1) The extensive network of perennial rivers depositing loose silt
(2) Over-application of chemical fertilizers loosening the soil crust
(3) A loose, single-grained soil structure combined with scant vegetation
(4) The high clay content which turns into fine dust during summers
(5) Question not attempted

54. Consider the following factors:
I. Lack of vegetative cover
II. High wind velocity during summers
III. High moisture content in topsoil
IV. Overgrazing by livestock
V. Cultivation on marginal lands
Which combination of factors accelerates wind erosion in the Thar Desert?
(1) I, II, III, and V
(2) I, II, IV, and V
(3) II, III, IV, and V
(4) I, III, IV, and V
(5) Question not attempted

55. All of the following are recognized agronomic measures to control wind erosion in the arid districts of Rajasthan, except:
(1) Establishment of shelterbelts and windbreaks
(2) Practicing stubble mulching
(3) Strip cropping with cover crops
(4) Up-and-down slope ploughing
(5) Question not attempted

56. Select the correct sequence of soil textures in decreasing order of their susceptibility to wind erosion in Rajasthan:
(1) Clay > Silty Loam > Loamy Sand > Sand
(2) Sand > Loamy Sand > Sandy Loam > Silt Loam
(3) Sandy Loam > Sand > Clay > Loamy Sand
(4) Silt Loam > Clay > Sand > Sandy Loam
(5) Question not attempted

57. Which of the following statements about shifting sand dunes and soil erosion in Rajasthan is correct?
(1) Longitudinal dunes are the most mobile and erosive among all types.
(2) Sand dune stabilization is impossible due to the lack of groundwater.
(3) Barchans pose the greatest threat due to their high mobility.
(4) Parabolic dunes are generally devoid of any vegetation and move fast.
(5) Question not attempted

58. The notorious 'Utkhat Bhumi' or badlands topography of the Chambal basin represents the terminal and most destructive stage of which type of soil erosion?
(1) Gully erosion
(2) Sheet erosion
(3) Wind erosion
(4) Rill erosion
(5) Question not attempted

59. Consider the following stages of water erosion:
I. Gully erosion
II. Splash erosion
III. Rill erosion
IV. Sheet erosion
Which of the following represents the correct sequence from the initial impact to the most severe formation?
(1) II, IV, III, I
(2) IV, II, III, I
(3) II, III, IV, I
(4) III, II, IV, I
(5) Question not attempted

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the Hadoti Plateau is characterized by clayey Vertisols. The fertile Eastern River Plains are dominated by Alfisols, which are mature and productive. In contrast, the Western Sandy Plains are primarily covered by Aridisols, which are suited to the region's arid climatic conditions.

46. (4) They have excellent water-holding capacity and deep organic topsoil.
The Lithosols of the Aravalli region are characterized by a very shallow soil depth and a high concentration of gravel and unweathered rock fragments. They are highly susceptible to runoff and water erosion due to their steep locations. Consequently, they possess very poor water-holding capacity and lack deep organic topsoil, making them unsuitable for most forms of intensive and commercial agriculture.

47. (1) Shallow rooting depth and low moisture retention
Afforestation on the Lithosols of the Aravalli slopes requires selecting species that can thrive despite significant constraints. These soils offer very shallow rooting depth and extremely low moisture retention due to their stony and skeletal nature. Plants must be hardy enough to survive in a thin soil layer where water drains away quickly and nutrient availability is limited by minimal weathering.

48. (2) Banas
Brown soils are characteristically found in the semi-arid transitional zones of Rajasthan, particularly within the Banas River basin. These soils support significant agriculture for both Kharif and Rabi seasons. They are more fertile and have better moisture retention than the desert sands of the west, making them vital for the agricultural economy of the central and eastern parts of the state.

49. (2) III and IV only
Reddish-brown soils are common in districts like Jalore, Pali, and Nagaur, featuring textures ranging from sandy loam to clay loam. However, it is incorrect to say they are devoid of calcium carbonate or have naturally high nitrogen content. In reality, these soils often contain some lime and, like most soils in Rajasthan, are typically deficient in nitrogen and organic matter.

50. (1) Jodhpur, Pali, Nagaur, and Sikar
Brown sandy soils are predominantly distributed across the semi-arid regions of Rajasthan. These soils are most commonly found in a belt including districts like Jodhpur, Pali, Nagaur, and Sikar. They represent a transition between the extremely arid desert sands to the west and the more fertile alluvial or black soils found in the eastern and south-eastern parts of the state.

51. (1) A-iii, B-iv, C-ii, D-i
Under the USDA soil classification, Entisols are largely found in arid districts like Jaisalmer and Bikaner. Inceptisols are prominent in hilly or undulating areas like Sirohi and Rajsamand. Alfisols dominate the eastern plains, including Jaipur and Dholpur. Vertisols, the heavy clay soils, are characteristic of the south-eastern Hadoti districts such as Jhalawar and Baran, known for their volcanic origins.

52. (4) Phosphorus status - Generally adequate for crop growth
Brown soils in the semi-arid regions of Rajasthan possess specific nutrient characteristics. Their phosphorus status is generally considered adequate for supporting crop growth, which is a key advantage for local farmers. Unlike heavily leached soils, they maintain a decent base saturation. Their texture is typically loamy rather than heavy clay, and they are not confined strictly to humid southern plains.

53. (3) A loose, single-grained soil structure combined with scant vegetation
Western Rajasthan is extremely susceptible to wind erosion due to the combination of a loose, single-grained soil structure and scant natural vegetation. The sandy soils lack cohesive properties, allowing high-velocity winds to easily detach and transport soil particles. The lack of ground cover further exposes the surface, leading to the massive movement of sand and degradation of agricultural land.

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54. (2) I, II, IV, and V
Wind erosion in the Thar Desert is accelerated by several human and environmental factors. A lack of vegetative cover and high wind velocities during summer are primary drivers. Additionally, overgrazing by livestock and the cultivation of marginal lands further loosen the

the surface creates significant drainage issues. When heavy surface irrigation is applied, the water cannot percolate into deeper layers and instead collects above the hardpan. This results in a perched water table, leading to immediate waterlogging and salinity, which severely restricts crop growth and damages the productive soil.

73. (1) <6.5, 6.5-7.5, <8.5 (with high EC), >8.5 (with high ESP)
Soil classification based on pH is essential for proper management. Acidic soils have a pH below 6.5, while neutral soils range between 6.5 and 7.5. Saline soils typically have a pH below 8.5 but are identified by high electrical conductivity. Alkaline soils are characterized by a pH above 8.5 and a high exchangeable sodium percentage, requiring specific chemical amendments like gypsum.

74. (1) Suratgarh, Sri Ganganagar
The national Soil Health Card scheme was a major initiative launched to improve agricultural productivity across India. It was historically inaugurated by the Prime Minister in Rajasthan from Suratgarh, located in the Sri Ganganagar district. This launch highlighted the state's importance in national agriculture and the need for scientific soil management to ensure sustainable farming and balanced nutrient application.

75. (4) It tests soil strictly for three macronutrients only.
The Soil Health Card scheme is a comprehensive program that evaluates twelve different soil parameters, including macronutrients, micronutrients, and physical properties. It is incorrect to state that it tests for only three macronutrients. The card provides farmers with specific recommendations for fertilizers and amendments based on the actual nutrient status of their fields, helping them reduce costs and improve yields.

76. (2) 2015
The flagship Soil Health Card scheme was officially launched in Rajasthan in the year 2015. This initiative was introduced to provide every farmer with a detailed report on the nutrient status of their soil. By moving away from guesswork in fertilizer application, the scheme aims to promote balanced nutrition, enhance soil fertility, and ensure the long-term sustainability of agriculture.

77. (1) Both Statement I and Statement II are correct
The Soil Health Card initiative is designed to transform agricultural management by promoting the balanced use of chemical fertilizers alongside organic manures. This targeted approach is highly beneficial as it helps farmers significantly reduce their input costs. Furthermore, by preventing the over-application of specific nutrients, the scheme protects the soil from further degradation and maintains its long-term health and productivity.

78. (4) Secondary Nutrient - Sulphur
Under the Soil Health Card scheme, twelve soil parameters are tested to provide a complete fertility profile. These are categorized into different groups. Sulphur is correctly matched as a secondary nutrient that is essential for various plant processes. Other parameters tested include primary macronutrients like nitrogen, micronutrients like zinc and boron, and physical characteristics such as pH and electrical conductivity.

79. (1) Gypsum
When a Soil Health Card indicates highly alkaline conditions with a pH above 9.0 and high sodium levels, the application of gypsum is the standard recommendation. Gypsum reacts with the soil to displace exchangeable sodium, improving soil structure and reducing alkalinity. This amendment is best applied before the monsoon to allow rainwater to help leach the displaced sodium from the profile.

80. (2) Swasth Dhara, Khet Hara
The Soil Health Card scheme is promoted with the official motto "Swasth Dhara, Khet Hara," which translates to "Healthy Earth, Green Field." This theme emphasizes the critical link between maintaining the health of the soil and achieving productive, lush agricultural landscapes. It encourages farmers to treat their land with scientific care to ensure prosperity and sustainable development for future generations.

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allows more water to infiltrate the soil, reduces the removal of topsoil, and helps maintain long-term land productivity.

64. (3) I, II, and IV
Mechanical measures for soil conservation involve physical structures designed to control the flow of water and reduce erosion. These include contour bunding, bench terracing, and the construction of check dams. While crop rotation is an important conservation practice, it is classified as an agronomic or biological measure rather than a mechanical one because it focuses on vegetation and management.

65. (1) A-iii, B-i, C-ii, D-iv
Soil conservation involves various specialized practices. Mulching uses organic material to cover soil and retain moisture. Strip cropping grows alternating bands of different crops to resist erosion. Shelterbelts consist of rows of trees planted to block the wind. Contour bunding involves building earthen embankments across slopes to intercept runoff. Together, these methods protect the soil from wind and water-driven degradation.

66. (1) Grassed waterways
Among the listed soil conservation measures, grassed waterways are classified as an agrostological or biological measure. This practice involves using vegetative cover, specifically grasses, to stabilize drainage channels and prevent erosion by slowing down water flow. In contrast, gabion structures, percolation tanks, and drop spillways are mechanical or engineering structures made of stone, concrete, or other non-biological materials.

67. (3) Jodhpur
The Central Arid Zone Research Institute, known as CAZRI, is a premier research organization focused on the problems of arid regions. It is headquartered in Jodhpur, Rajasthan. CAZRI conducts vital research on soil conservation, desertification control, and sustainable land management. Its work is essential for developing technologies and strategies to improve the livelihoods of people living in the Thar Desert.

68. (4) Sem problem
In the Indira Gandhi Canal Project command area, prolonged waterlogging has led to a severe form of land degradation known locally as the 'Sem' problem. This occurs when the water table rises close to the surface, making the soil saturated and often saline. This condition renders previously fertile agricultural land unproductive and requires specialized drainage and management interventions for reclamation.

69. (1) Both A and R are true and R is the correct explanation of A.
The IGNP command area faces productivity losses due to waterlogging and salinity, a phenomenon linked to both human and geological factors. Over-irrigation increases water input, while a subsurface hardpan of gypsum prevents deep percolation. This combination causes the water table to rise significantly, trapping salts in the root zone and creating unproductive conditions that hinder traditional agricultural activities.

70. (2) It is biologically resolved by planting high-water-consuming species like Eucalyptus.
The 'Sem' problem, or waterlogging, in Rajasthan's canal command areas can be biologically addressed by planting high-water-consuming tree species. Eucalyptus is often used for this purpose because its deep roots and high transpiration rates help lower the rising water table. This method, known as biodrainage, provides a natural solution to reclaiming saturated lands without the need for expensive mechanical systems.

71. (2) I, II, III, and IV
Land degradation in Rajasthan is driven by several human activities that disrupt the natural soil balance. Key drivers include the excessive use of chemical fertilizers, intensive canal irrigation without proper drainage, and unregulated mining in the Aravallis. Deforestation for agricultural expansion also exposes the soil to erosion. Conversely, the adoption of organic farming is a restorative practice that helps improve soil health.

72. (1) Perched water table leading to immediate waterlogging
In certain parts of Bikaner and Hanumangarh, an impervious hardpan located just beneath

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soil. High moisture content in the topsoil would actually help resist erosion by increasing particle cohesion and surface weight.

55. (4) Up-and-down slope ploughing
Agronomic measures to control wind erosion in Rajasthan's arid districts focus on stabilizing the soil surface and reducing wind speed. Practices include establishing shelterbelts, using stubble mulching, and strip cropping. However, up-and-down slope ploughing is a detrimental practice that actually promotes erosion; instead, ploughing should be done across the wind direction or following contours to protect the fragile topsoil.

56. (2) Sand > Loamy Sand > Sandy Loam > Silt Loam
The susceptibility of soil to wind erosion is heavily influenced by its texture and particle size. Fine sand is the most easily moved, making sandy soils the most susceptible. Susceptibility decreases as the proportion of smaller, cohesive particles like silt and clay increases. Therefore, the sequence in decreasing order of susceptibility is sand, followed by loamy sand, sandy loam, and silt loam.

57. (3) Barchans pose the greatest threat due to their high mobility.
Barchans, which are crescent-shaped sand dunes, pose the greatest threat in the Rajasthan desert due to their high mobility and rapid movement. They are typically found in areas with limited sand supply and constant wind direction. Unlike parabolic dunes, which are often stabilized by vegetation, barchans shift quickly across the landscape, encroaching upon roads, settlements, and precious agricultural fields.

58. (1) Gully erosion
The 'Utkhat Bhumi' or badlands of the Chambal basin are the result of severe gully erosion. This represents the terminal stage of water erosion where deep, wide channels are carved into the landscape, making the land unsuitable for cultivation. These ravines are formed by the concentrated force of runoff on the deep alluvial soils, creating a highly dissected and unproductive topography.

59. (1) II, IV, III, I
Water erosion progresses through several distinct stages, starting from the initial impact of raindrops. The correct sequence begins with splash erosion, followed by sheet erosion, which removes a uniform layer of topsoil. Next is rill erosion, where small visible channels form. The final and most severe stage is gully erosion, where these rills deepen into large ravines that devastate the land.

60. (1) Both Statement I and Statement II are correct
Sheet erosion is a subtle but destructive process where a thin, uniform layer of topsoil is removed by surface runoff. Because it occurs evenly across a slope, it often goes unnoticed by farmers until significant damage is done. This process is particularly harmful because it involves the continuous loss of the most fertile upper layer, which contains essential nutrients and organic matter.

61. (4) I, II, and III
Gully erosion is a major environmental challenge in the Chambal River basin, significantly affecting several districts in eastern Rajasthan. Dholpur, Sawai Madhopur, and Kota are the most severely impacted areas. The combination of deep alluvial soil and high-intensity seasonal rainfall has led to the formation of extensive ravines, creating a rugged badland topography that hinders agriculture and development.

62. (4) Deep alluvial profile, steep gradients, and seasonal flash floods
The extensive formation of ravines in the Chambal basin is primarily due to the region's deep alluvial profiles and steep topographical gradients. During the monsoon, seasonal flash floods provide the energy necessary to carve deep channels into the soft, thick soil layers. This natural process, exacerbated by lack of vegetation, results in the highly dissected and characteristic badland topography of the area.

63. (1) Contour farming
For farmers in the undulating and sloping terrains of Dungarpur, contour farming is the most effective agronomic practice to minimize water erosion. By ploughing and planting across the slope following natural contours, they create small barriers that slow down surface runoff. This

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CHAPTER 22
Agriculture

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1. Which of the following approximately represents the contribution of the agriculture and allied sector to the Gross State Value Added (GSVA) of Rajasthan at constant prices (2011-12) in recent years?
(1) 15 to 18 percent
(2) 28 to 30 percent
(3) 40 to 45 percent
(4) 10 to 12 percent
(5) Question not attempted

2. Which of the following is not a primary characteristic of the agricultural economy of Rajasthan?
(1) Higher average crop yield compared to the national average
(2) High dependence on erratic monsoon rainfall
(3) Preponderance of small and marginal landholdings
(4) Significant contribution of the livestock sector to agricultural income
(5) Question not attempted

3. What is the primary economic effect of delayed or deficient monsoons on Rajasthan's agriculture?
(1) Immediate shift from Kharif crops to Zaid crops
(2) Increased total sown area due to drought-resistant cropping
(3) Severe fluctuation in agricultural GSVA and rural employment
(4) Enhancement of soil fertility due to extended fallow periods
(5) Question not attempted

4. Match the Agro-Climatic Zones of Rajasthan in List I with the Dominant Crop Characteristics in List II:
List I: (Agro-Climatic Zones)
A. Arid Western Plain
B. Flood Prone Eastern Plain
C. Sub-Humid Southern Plain
D. Irrigated North Western Plain
List II: (Dominant Crop Characteristics)
i. Wheat and Mustard dominance
ii. Bajra and Moth dominance
iii. Cotton and Wheat dominance
iv. Maize dominance
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

5. Consider the following statements regarding the importance of agriculture in Rajasthan:
I. The allied sector (livestock) consistently contributes nearly half of the total agricultural GSVA in the state.
II. The agriculture sector provides direct employment to more than fifty percent of the total workforce in Rajasthan.
III. Commercial crops occupy a larger gross cropped area than foodgrain crops in the state.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

6. The Kharif cropping season in Rajasthan typically corresponds to which of the following sowing and harvesting months?
(1) Sown in October-November and harvested in March-April
(2) Sown in June-July and harvested in September-October
(3) Sown in March-April and harvested in June-July
(4) Sown in January-February and harvested in May-June
(5) Question not attempted

(1) Northern irrigated plains including Ganganagar and Hanumangarh.
(2) Southern and South-Eastern regions like Udaipur and Bhilwara.
(3) Western arid region covering Jaisalmer, Barmer, and Bikaner.
(4) Central semi-arid region encompassing Nagaur and Jodhpur.
(5) Question not attempted

23. Identify the odd one out among the following improved crop varieties developed specifically for Rajasthan.
(1) Mahi Kanchan
(2) Mahi Dhawal
(3) Navjot
(4) Mahi Sugandha
(5) Question not attempted

24. Match the Crops in List I with their Key Producing Districts or Regions in Rajasthan in List II:
List I: (Crop)
A. Jowar (Sorghum)
B. Maize
C. Wheat
D. Bajra
List II: (Key Producing District/Region)
i. Barmer and Jodhpur
ii. Ajmer and Tonk
iii. Banswara and Udaipur
iv. Ganganagar and Hanumangarh
(1) A-ii, B-iii, C-iv, D-i
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-ii, C-iv, D-i
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

25. Consider the following statements regarding Maize cultivation in Rajasthan:
I. Maize requires high temperatures and well-drained loamy soils.
II. The red loam soil of southern Rajasthan is highly suitable for its cultivation.
III. It is primarily cultivated as a Kharif crop across the state.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

26. Which of the following is a correct statement regarding the agro-climatic needs of Jowar (Sorghum) in Rajasthan?
(1) It is heat and drought tolerant, often called the 'camel crop'.
(2) It is sensitive to cold and dies if temperatures exceed 25°C.
(3) It requires a high minimum of 150 cm annual rainfall for growth.
(4) It requires water stagnation during its early vegetative stage.
(5) Question not attempted

27. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Select the correct answer using the codes given below:
Assertion (A): Rajasthan is one of the leading producers of pulses like Moong and Moth in India.
Reason (R): These leguminous crops are drought-resistant, require minimal irrigation, and adapt well to the arid conditions of the state.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

28. Which of the following districts is traditionally recognized as a leading producer of Gram (Chana) in Rajasthan?
(1) Jaisalmer
(2) Bikaner
(3) Dungarpur
(4) Rajsamand
(5) Question not attempted

29. Which of the following is not cultivated as a Kharif pulse in Rajasthan?
(1) Moong (Green Gram)
(2) Moth Bean
(3) Gram (Chickpea)
(4) Urad (Black Gram)
(5) Question not attempted

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C. Directorate of Rapeseed-Mustard Research
D. All India Coordinated Pearl Millet Improvement Project (Mandor)

List II: (Location)
i. Bharatpur
ii. Ajmer
iii. Jodhpur
iv. Jaipur

(1) A-iii, B-ii, C-i, D-iii
(2) A-ii, B-i, C-iv, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

15. Consider the following statements about Bajra cultivation in Rajasthan:
I. Rajasthan accounts for over 40 percent of the total Bajra production in India.
II. It is characterized as a hardy crop with deep root systems suited for arid climates.
III. It can tolerate drought conditions significantly better than maize or rice.
IV. Alwar and Jaipur also produce Bajra in the eastern parts of the state.
V. It is primarily grown as a commercial cash crop rather than a food crop.

Which of the above statement(s) is/are correct?
(1) I, II, III and IV only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

16. What is the most appropriate reason for Bajra being the leading Kharif crop by sown area in Rajasthan?
(1) Government procures the crop at high prices for the rural economy.
(2) It provides staple food for humans and fodder for livestock.
(3) It has high export demand across international markets in Asia.
(4) It restores nitrogen to the soil faster than leguminous crops.
(5) Question not attempted

17. Which region of Rajasthan dominates in the production of wheat?
(1) Arid Western Region
(2) Eastern and Irrigated Northern Region
(3) Hilly Southern Region
(4) Bikaner-Jaisalmer belt
(5) Question not attempted

18. Which of the following statements about wheat cultivation in Rajasthan is incorrect?
(1) It can be highly successfully grown in the shifting sand dunes of western Rajasthan without irrigation.
(2) It is the most extensively grown cereal crop of the Rabi season.
(3) The crop requires cool temperatures during early growth and warm temperatures at maturity.
(4) Winter rains, locally known as Mawath, are highly beneficial for its vegetative growth.
(5) Question not attempted

19. Select the correct sequence of the following districts of Rajasthan in generally descending order of their total wheat production:
(1) Ganganagar, Hanumangarh, Alwar, Bharatpur
(2) Barmer, Jaisalmer, Churu, Bikaner
(3) Udaipur, Dungarpur, Banswara, Pratapgarh
(4) Jodhpur, Nagaur, Pali, Sirohi
(5) Question not attempted

20. How does the occurrence of severe frost in January primarily affect the wheat crop in eastern Rajasthan?
(1) It accelerates the ripening process leading to early harvest.
(2) It increases the protein content of the wheat grains.
(3) It effectively eliminates all soil-borne pathogens boosting long-term soil health.
(4) It damages the crop by causing freezing injury to plant tissues and reducing yield.
(5) Question not attempted

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21. Which soil type is considered most suitable for the optimal cultivation of wheat in the eastern plains of Rajasthan?
(1) Desert sandy soil
(2) Saline and alkaline soil
(3) Fertile alluvial (loamy) soil
(4) Red and yellow soil
(5) Question not attempted

22. In which of the following regions of Rajasthan is Maize (Makka) predominantly cultivated?

7. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Select the correct answer using the codes given below:
Assertion (A): Zaid crops in Rajasthan are almost entirely cultivated in areas with assured irrigation facilities.
Reason (R): The Zaid season coincides with the dry, hot summer months when rainfall is practically non-existent.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

8. Identify the odd one out based on the cropping season in Rajasthan.
(1) Barley
(2) Bajra
(3) Moth
(4) Sesamum (Til)
(5) Question not attempted

9. Which of the following pairs of Crop and its predominant Cropping Season in Rajasthan is incorrectly matched?
(1) Groundnut - Kharif
(2) Gram (Chana) - Rabi
(3) Mustard - Kharif
(4) Muskmelon - Zaid
(5) Question not attempted

10. Consider the following statements regarding cropping seasons in Rajasthan:
I. Kharif crops are sown with the onset of the southwest monsoon.
II. Rabi crops rely primarily on residual soil moisture and winter showers known as Mawath.
III. Zaid crops are predominantly cultivated in un-irrigated arid zones of western Rajasthan.
IV. Wheat and Barley are the primary cereal crops of the Rabi season.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) III only
(3) II and IV
(4) III and IV
(5) Question not attempted

11. What is the approximate rank of Rajasthan in the total production of Bajra (Pearl Millet) in India?
(1) Second
(2) Third
(3) Fourth
(4) First
(5) Question not attempted

12. Which of the following statements is correct regarding the agro-climatic requirements of Bajra?
(1) It requires a cool climate and heavy clayey soils for optimal growth.
(2) It requires high temperatures and grows well in light, sandy soils with low moisture.
(3) It thrives best in high rainfall areas exceeding 100 cm annually.
(4) It is highly sensitive to drought and requires continuous waterlogging.
(5) Question not attempted

13. Consider the following statements and select the correct option:
Statement I: Bajra is predominantly cultivated in the western and central districts of Rajasthan such as Barmer, Jodhpur, and Nagaur.
Statement II: The sandy soils and arid climate of western Rajasthan provide ideal ecological conditions for Bajra cultivation.
(1) Both Statement I and Statement II are correct, and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct, but Statement II does not explain Statement I.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

14. Match the Research Institutes or Centres in List I with their Locations in Rajasthan in List II:
List I: (Research Institute / Centre)
A. Central Arid Zone Research Institute (CAZRI)
B. National Research Centre on Seed Spices

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30. Consider the following statements regarding the national significance of pulses from Rajasthan:
I. Rajasthan often ranks among the top three states in overall pulse production in India.
II. Cultivation of pulses helps in nitrogen fixation, thereby improving the fertility of sandy soils.
III. Moth bean is exclusively cultivated for export to European markets.
IV. Pulses constitute a major source of protein for the vegetarian population of the state.
Which of the above statement(s) is/are correct?
(1) I, II and III
(2) I, II and IV
(3) II, III and IV
(4) I, III and IV
(5) Question not attempted

31. Which of the following pairs of Pulse Crop and its associated characteristic/region is correctly matched?
(1) Moth - Drought resistant, grown mainly in arid western districts.
(2) Moong - Requires very heavy rainfall and water-retentive clayey soil.
(3) Gram (Chana) - Primarily sown during the dry summer Zaid season.
(4) Arhar (Pigeon Pea) - The most widely grown pulse in Jaisalmer district.
(5) Question not attempted

32. Consider the following statements and select the correct option:
Statement I: Gram (Chana) cultivation in Rajasthan sees major fluctuations in production from year to year.
Statement II: Gram is highly susceptible to frost during the winter season and depends heavily on residual soil moisture.
(1) Both Statement I and Statement II are correct, and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct, but Statement II does not explain Statement I.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

33. Rajasthan is the top producer of Mustard in India. It generally accounts for approximately what percentage of the total national mustard production?
(1) 10 - 15 percent
(2) 40 - 45 percent
(3) 20 - 25 percent
(4) 75 - 80 percent
(5) Question not attempted

34. Match the Agricultural Features or Institutes in List I with their Crop Association in List II:
List I: (Agricultural Feature/Institute)
A. Directorate of Research in Bharatpur
B. White Grub pest vulnerability
C. High requirement of Potash and Sulphur
D. Origin of 'Mahi Sugandha'
List II: (Crop Association)
i. Rice
ii. Mustard
iii. Groundnut
iv. Mustard and other oilseeds
(1) A-ii, B-iii, C-iv, D-i
(2) A-iv, B-i, C-ii, D-iii
(3) A-ii, B-iv, C-i, D-iii
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

35. Consider the following statements regarding Mustard cultivation in Rajasthan:
I. It is primarily a Rabi season oilseed crop.
II. Alwar, Bharatpur, and Ganganagar are among the leading producing districts.
III. It requires 100-150 cm of heavy rainfall for proper pod development.
IV. Frost during the flowering stage can cause severe damage to the crop.
V. The crop requires well-drained, sandy loam to clay loam soils.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III only
(3) IV and V only
(4) II and III only
(5) Question not attempted

36. What is the primary cause of Mustard being highly dominant in the eastern districts of Rajasthan (like Bharatpur and Alwar)?
(1) Total absence of freezing winter temperatures in these districts.

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(2) Exclusive subsidies provided only to farmers in eastern Rajasthan.
(3) Extreme soil salinity which exclusively supports the mustard crop.
(4) Availability of alluvial soils and moderate irrigation facilities.
(5) Question not attempted

37. Which of the following statements about Mustard as an oilseed crop in Rajasthan is incorrect?
(1) It forms the backbone of the edible oil processing industry in the state.
(2) It is frequently grown as a mixed crop with wheat or gram.
(3) It requires standing water in the fields during the entire maturation phase.
(4) Aphids are a major pest that significantly affects its yield.
(5) Question not attempted

38. Which of the following represents the most appropriate agro-climatic condition for sowing mustard in Rajasthan?
(1) High temperature and high humidity in July
(2) Cool temperature and dry climate in October-November
(3) Extreme heat and dry winds in May
(4) Heavy rainfall and waterlogged soils in August
(5) Question not attempted

39. Arrange the following districts of Rajasthan in descending order based on their general contribution to groundnut production in recent years:
I. Bikaner
II. Jodhpur
III. Jaipur
IV. Dungarpur
Select the correct order from the options given below:
(1) I, II, III, IV
(2) IV, III, II, I
(3) II, I, IV, III
(4) I, III, II, IV
(5) Question not attempted

40. Which statement is correct regarding the distribution of Groundnut in southern Rajasthan?
(1) Chittorgarh and Bhilwara produce it using red and black soils.
(2) It is exclusively cultivated in the highly saline tracts of the region.
(3) Groundnut in this region requires no irrigation and relies on winter frost.
(4) It is primarily grown as a Zaid crop during the dry summer months.
(5) Question not attempted

41. Identify the odd one out with respect to major pests and diseases that affect groundnut cultivation in Rajasthan.
(1) White grub
(2) Tikka disease
(3) Pink bollworm
(4) Collar rot
(5) Question not attempted

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42. Which place in Rajasthan is popularly known as the 'Rajkot of Rajasthan' due to its high production and excellent quality of groundnut?
(1) Lunkaransar
(2) Suratgarh
(3) Phalodi
(4) Nohar
(5) Question not attempted

43. Why is loose, friable, and well-drained sandy loam soil essential for successful groundnut cultivation?
(1) It prevents the excessive growth of leaves and stems during maturation.
(2) It retains maximum water to keep roots submerged at all times of the day.
(3) It accelerates the natural nitrogen-depleting process of the plant.
(4) It facilitates the penetration of 'pegs' for pod formation.
(5) Question not attempted

44. Match the Cotton Varieties in List I with their Prominent Regions in Rajasthan in List II:
List I: (Cotton Variety/Type)
A. American Cotton (Narma)
B. Malvi Cotton
C. Desi Cotton
D. Bikaneri Narma

List II: (Prominent Region)
i. Jhalawar, Kota, Banswara
ii. Ganganagar and Hanumangarh
iii. Udaipur and Chittorgarh
iv. Bikaner and surrounding irrigated tracts
(1) A-ii, B-i, C-iii, D-iv
(2) A-i, B-ii, C-iv, D-iii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

45. Consider the following statements regarding American Cotton cultivation in the Ganganagar-Hanumangarh belt:
I. It is predominantly a rainfed crop requiring no artificial irrigation.
II. It possesses longer staples compared to the indigenous Desi cotton varieties.
III. The availability of canal water (like the Indira Gandhi Canal and Gang Canal) has made this belt the top producer in the state.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

46. Consider the following statements and select the correct option:
Statement I: The Pink Bollworm is a major threat to cotton cultivation in northern Rajasthan.
Statement II: The adoption of Bt Cotton has permanently eradicated all pest issues in the state.
(1) Both Statement I and Statement II are correct.
(2) Statement I is correct, but Statement II is incorrect.
(3) Statement I is incorrect, but Statement II is correct.
(4) Both Statement I and Statement II are incorrect.
(5) Question not attempted

47. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Select the correct answer using the codes given below:
Assertion (A): Sri Ganganagar and Hanumangarh are the leading districts in cotton production in Rajasthan.
Reason (R): These districts are characterized by the availability of assured canal irrigation networks and fertile alluvial soils.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

48. Which of the following soil types is generally considered least suitable for commercial cotton cultivation in Rajasthan?
(1) Medium black soil
(2) Extremely shallow, gravelly desert soil
(3) Alluvial soil
(4) Deep clayey loam
(5) Question not attempted

49. Sugarcane cultivation in Rajasthan is predominantly localized in which of the following pairs of districts?
(1) Barmer and Jaisalmer
(2) Chittorgarh and Bundi
(3) Churu and Jhunjhunu
(4) Jodhpur and Nagaur
(5) Question not attempted

50. Consider the following statements regarding the constraints of sugarcane cultivation in Rajasthan:
I. It is a long-duration crop requiring nearly 10-12 months to mature.
II. It requires intensive and continuous irrigation, which is scarce in Rajasthan.
III. The arid climate of western Rajasthan accelerates its growth rate significantly.
IV. It is highly susceptible to frost, which limits its spread in northern districts during winter.
Which of the above statement(s) is/are correct?
(1) I, II and III
(2) I, II and IV
(3) II, III and IV
(4) I, III and IV
(5) Question not attempted

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II. Rajasthan Millets Mission
III. Mukhyamantri Seed Multiplication Village Scheme

Select the correct order from the options given below:

(1) I, III, II
(2) III, I, II
(3) II, I, III
(4) I, II, III
(5) Question not attempted

80. What is the most appropriate aim of the 'Rajasthan Agro-processing, Agri-business and Agri-export Promotion Policy, 2019'?

(1) To completely ban the export of raw agricultural produce to ensure local food security.
(2) Increase income by building supply chains and encouraging value addition.
(3) To acquire agricultural land forcibly for establishing large-scale multi-national SEZs.
(4) To provide monthly direct cash transfers to farmers for refraining from seasonal farming.
(5) Question not attempted

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(1) Both Statement I and Statement II are correct, and Statement II explains Statement I.
(2) Both Statement I and Statement II are correct, but Statement II does not explain Statement I.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

59. Select the correct sequence of the following districts of Rajasthan in generally descending order of Cumin (Jeera) production:
(1) Jalore, Barmer, Jodhpur
(2) Jhalawar, Baran, Kota
(3) Ganganagar, Hanumangarh, Bikaner
(4) Udaipur, Dungarpur, Banswara
(5) Question not attempted

60. Which statement is correct regarding the vulnerabilities of Cumin (Jeera) cultivation in Rajasthan?
(1) It is highly resistant to all types of fungal diseases.
(2) Blight and frost at flowering can cause crop failure.
(3) It requires stagnant water for a month before harvest.
(4) High temperatures during sowing are needed for growth.
(5) Question not attempted

61. Identify the odd one out among the major diseases affecting Cumin (Jeera) in western Rajasthan.
(1) Blight (Jhulsa)
(2) Powdery Mildew (Chhachhya)
(3) Red Rot
(4) Wilt (Uktha)
(5) Question not attempted

62. What is the most appropriate reason for the concentration of Cumin (Jeera) cultivation in districts like Jalore, Barmer, and Jodhpur?
(1) The crop requires the heavy clay soils uniquely found in these districts.
(2) These districts receive the highest rainfall in the state, which is necessary for Cumin.
(3) Only these districts are legally permitted by the state to grow export-quality spices.
(4) The cool, dry winter climate with light sandy-loam soils of this region is ideal for its growth.
(5) Question not attempted

63. Which of the following agricultural practices is deemed critical during the harvesting stage of Cumin (Jeera) to maintain its export quality?
(1) Uprooting plants early to prevent shattering of dry seeds.
(2) Submerging the harvested crop in stagnant water for fermentation.
(3) Harvesting the crop immediately after a heavy seasonal rain shower.
(4) Burning the surface foliage before extracting the seeds from pods.
(5) Question not attempted

64. Match the Horticultural Crops in List I with their Leading Producing Districts in Rajasthan in List II:
List I: (Horticultural Crop/Fruit)
A. Kinnow (Mandarin)
B. Orange (Santra)
C. Guava (Amrood)
D. Pomegranate (Anar)
List II: (Leading Producing District)
i. Sawai Madhopur
ii. Jhalawar
iii. Barmer / Jalore
iv. Ganganagar / Hanumangarh
(1) A-iv, B-ii, C-i, D-iii
(2) A-ii, B-iv, C-iii, D-i
(3) A-iv, B-i, C-ii, D-iii
(4) A-iii, B-ii, C-i, D-iv
(5) Question not attempted

65. Consider the following statements regarding Kinnow cultivation in Rajasthan:
I. It is a high-yielding hybrid variety of citrus fruit.
II. Ganganagar and Hanumangarh are the leading producers in the state.
III. It thrives best in the extremely arid and non-irrigated sand dunes of Jaisalmer.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III

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51. Which of the following pairs of Sugar Mills and their respective locations in Rajasthan is correctly matched?
(1) Rajasthan State Ganganagar Sugar Mills - Kota
(2) Keshoraipatan Sahakari Sugar Mills - Udaipur
(3) The Mewar Sugar Mills - Bhopal Sagar (Chittorgarh)
(4) Udaipur Sugar Mills - Sri Ganganagar
(5) Question not attempted

52. Which of the following statements about the climatic requirements for sugarcane in Rajasthan is incorrect?
(1) It thrives best in a tropical to subtropical climate with high humidity.
(2) It requires temperatures ranging between 21°C to 27°C during growth.
(3) Severe frost during the ripening stage drastically reduces recovery rates.
(4) Hot winds (Loo) during summer are beneficial for sucrose accumulation.
(5) Question not attempted

53. What is the primary cause for the limited and declining area under sugarcane cultivation in Rajasthan?
(1) A total ban by the state government on all water-intensive crops.
(2) Complete destruction of sugarcane crops by desert locusts annually.
(3) Depleting groundwater and high irrigation costs make it unviable.
(4) Major shift of local farmers towards growing temperate fruits.
(5) Question not attempted

54. Match the Spice Crops in List I with their Leading Producing Districts in Rajasthan in List II:
List I: (Spice Crop)
A. Coriander (Dhaniya)
B. Fenugreek (Methi)
C. Cumin (Jeera)
D. Fennel (Saunf)
List II: (Leading Producing District)
i. Jalore / Barmer
ii. Nagaur
iii. Baran / Jhalawar
iv. Sirohi / Tonk
(1) A-iii, B-ii, C-i, D-iv
(2) A-ii, B-iii, C-iv, D-i
(3) A-iii, B-i, C-ii, D-iv
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

55. Consider the following statements regarding seed spices in Rajasthan:
I. Rajasthan holds a near monopoly in the production of Coriander and Fenugreek in India.
II. The Hadoti region is famous for its large-scale coriander cultivation.
III. Nagaur is internationally renowned for its fragrant 'Pan Methi' (Kasuri Methi).
IV. Seed spices are primarily Kharif crops requiring heavy monsoon rains.
V. The National Research Centre on Seed Spices is located at Tabiji, Ajmer.
Which of the above statement(s) is/are correct?
(1) I, II, III and V only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

56. Which geographic region of Rajasthan is overwhelmingly dominant in the cultivation of Coriander (Dhaniya)?
(1) Hadoti plateau
(2) Shekhawati region
(3) Godwar region
(4) Mewar region
(5) Question not attempted

57. Which of the following is not a prominent spice crop commercially grown in Rajasthan?
(1) Cumin (Jeera)
(2) Garlic (Lahsun)
(3) Cardamom (Elaichi)
(4) Fenugreek (Methi)
(5) Question not attempted

58. Consider the following statements and select the correct option:
Statement I: The district of Nagaur in Rajasthan is historically recognized for producing high-quality Fenugreek (Methi).
Statement II: Fenugreek leaves and seeds from this region possess a distinct aroma due to the specific soil and dry climatic conditions.

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(5) Question not attempted

73. What is the primary cause of increasing soil salinity in the Indira Gandhi Canal command area?
(1) Continuous application of heavy rock phosphate chemicals to the soils.
(2) Natural deposition of saline dust by winds originating from Rann of Kutch.
(3) Capillary action bringing salts to the surface via waterlogging.
(4) Long-term cultivation of deep-rooted leguminous crops in the command area.
(5) Question not attempted

74. Match the Agricultural Challenges in List I with the Regions most severely affected in Rajasthan in List II:
List I: (Agricultural Challenge)
A. Waterlogging (Sem)
B. Severe Wind Erosion
C. Gully Erosion (Ravines)
D. Fluoride contamination in groundwater
List II: (Region)
i. Nagaur - Ajmer belt (Banka Patti)
ii. Hanumangarh - Ganganagar
iii. Jaisalmer - Barmer
iv. Dholpur - Sawai Madhopur
(1) A-ii, B-iii, C-iv, D-i
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-i, C-iv, D-iii
(4) A-iii, B-ii, C-i, D-iv
(5) Question not attempted

75. Consider the following statements regarding the 'Mukhyamantri Krishak Sathi Yojana' in Rajasthan:
I. It aims to provide financial assistance to farmers and agricultural laborers in case of death or disability due to accidents during agricultural work.
II. It promotes the distribution of free micro-irrigation equipment to all farmers.
III. The scheme covers accidents caused by agricultural machinery and electrocution.
IV. The financial assistance amount provided under the scheme can range up to ₹2 Lakh for accidental death.
V. It was launched exclusively for farmers growing commercial cash crops.
Which of the above statement(s) is/are correct?
(1) I, III and IV only
(2) I, II, III and IV only
(3) II, III and V only
(4) I, IV and V only
(5) Question not attempted

76. The 'Rajasthan Millets Mission' was launched by the state government with an initial budgetary allocation to promote the cultivation and processing of millets. In which financial year budget was it prominently announced?
(1) 2018-19
(2) 2022-23
(3) 2015-16
(4) 2010-11
(5) Question not attempted

77. Which statement is correct regarding the implementation of the PM-KUSUM scheme in Rajasthan?
(1) It mandates the state to purchase surplus crops at MSP rates.
(2) It provides free electricity to all farmers regardless of size.
(3) Bhaloji, Jaipur set up the first solar power plant under the scheme.
(4) It focuses on replacing chemical fertilizers with bio-options.
(5) Question not attempted

78. Which of the following pairs of Agricultural Scheme and its primary Objective in Rajasthan is incorrectly matched?
(1) Rajasthan Krishi Prasanskaran Niti - Promotion of agro-processing and agricultural exports
(2) Diggi Nirman Yojana - Providing financial assistance for constructing water storage structures
(3) Rajeev Gandhi Krishak Sathi Sahayata Yojana - Financial aid for accidental death/injury during farming
(4) Tarbandi Yojana - Distributing high-yielding seeds to marginal farmers
(5) Question not attempted

79. Arrange the following Rajasthan-specific policies/missions in chronological order of their launch year (from earliest to latest):
I. Rajasthan Agro-processing, Agri-business and Agri-export Promotion Policy

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combined with available irrigation in certain tracts, support the large-scale cultivation of chickpeas. Gram plays a significant role in the local economy and is a major component of the vegetarian diet, providing essential protein to the population.

29. (3) Gram (Chickpea)
Gram, or Chickpea, is exclusively a Rabi season crop in Rajasthan, meaning it is sown in winter and harvested in spring. Moong, Moth Bean, and Urad are all Kharif pulses that are typically sown during the monsoon season. Gram requires the cooler temperatures of the winter months and often relies on residual soil moisture or limited irrigation to reach maturity.

30. (2) I, II and IV
Rajasthan consistently ranks among India's top pulse producers. These crops are vital because they improve soil fertility through nitrogen fixation and serve as a primary protein source for vegetarians. However, Moth bean is a staple local food and is not exclusively grown for export to European markets. Most pulse production in the state is consumed domestically or sold in India.

31. (1) Moth - Drought resistant, grown mainly in arid western districts.
Moth bean is highly drought-resistant and is predominantly grown in the arid western districts of Rajasthan where other crops struggle to survive. Moong does not require heavy rainfall, and Gram is a Rabi crop, not a Zaid crop. Arhar is actually more common in eastern and southern regions rather than being the most widely grown pulse in the Jaisalmer district.

32. (1) Both Statement I and Statement II are correct, and Statement II explains Statement I.
Gram production in Rajasthan is subject to major annual fluctuations because the crop is highly sensitive to winter frost. Additionally, it depends heavily on residual soil moisture from the preceding monsoon. If the monsoon is poor or if severe frost occurs during the flowering stage in January, the yield can drop significantly, making the total state production quite unpredictable.

33. (2) 40 - 45 percent
Rajasthan is the undisputed leader in mustard production in India, often contributing between forty and forty-five percent of the total national output. The state's climatic conditions during the Rabi season are ideal for this oilseed. This high level of production supports a vast network of oil mills and makes the state a central hub for the country's edible oil industry.

34. (1) A-ii, B-iii, C-iv, D-i
The Directorate of Rapeseed-Mustard Research is located in Bharatpur. Groundnut is particularly vulnerable to the white grub pest. Mustard and other oilseeds have high requirements for potash and sulphur to ensure good oil content. Mahi Sugandha is a specific rice variety. These associations highlight the specialized pests, nutrient needs, and regional research focuses within Rajasthan's diverse agricultural sector.

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35. (2) III only
It is incorrect to say that mustard requires 100-150 cm of heavy rainfall. In fact, mustard is a Rabi crop that thrives in relatively dry conditions with limited moisture. It is indeed a major winter oilseed grown in Alwar and Bharatpur. While it requires well-drained soils, it is highly susceptible to frost damage during its critical flowering and pod-filling stages.

36. (4) Availability of alluvial soils and moderate irrigation facilities.
The dominance of mustard in eastern districts like Bharatpur and Alwar is primarily due to the availability of fertile alluvial soils and sufficient irrigation. These regions provide the stable environment needed for consistent yields. While winter frost can still be a threat, the combination of favorable soil texture and water access makes these eastern plains the most productive mustard belt in Rajasthan.

37. (3) It requires standing water in the fields during the entire maturation phase.
Mustard does not require standing water; in fact, excessive waterlogging can be harmful to the crop. It is typically grown in well-drained soils and is often intercropped with gram or wheat. While it is central to the state's oil industry and can be affected by aphid infestations, its water requirements are moderate and satisfied through periodic irrigation or winter rain.

ANSWERS

1. (2) 28 to 30 percent
In Rajasthan, the agriculture and allied sector contributes significantly to the Gross State Value Added. At constant prices, this contribution typically ranges between twenty-eight and thirty percent annually. This sector includes crops, livestock, forestry, and fishing, with livestock being a major component. Such figures highlight the state's heavy economic dependence on primary production despite arid climatic challenges.

2. (1) Higher average crop yield compared to the national average
Rajasthan's agriculture is characterized by harsh climatic conditions, leading to crop yields that are generally lower than the national average. Key features include a high reliance on erratic monsoon rainfall and a predominance of small and marginal landholdings. Additionally, the livestock sector plays a vital role in providing stable income to farmers across the diverse agro-climatic zones.

3. (3) Severe fluctuation in agricultural GSVA and rural employment
Delayed or deficient monsoons in Rajasthan lead to significant instability in the agricultural economy. This deficiency results in severe fluctuations in the Gross State Value Added and adversely impacts rural employment opportunities. Since a large portion of the population depends on rainfed farming, water scarcity directly correlates with reduced crop production and increased economic vulnerability in rural districts.

4. (1) A-ii, B-i, C-iv, D-iii
The Arid Western Plain is dominated by Bajra and Moth due to low rainfall. The Flood Prone Eastern Plain favors Wheat and Mustard with better soil moisture. The Sub-Humid Southern Plain, including Udaipur, is known for Maize cultivation. Finally, the Irrigated North Western Plain, specifically Ganganagar and Hanumangarh, focuses on Cotton and Wheat thanks to extensive canal irrigation networks.

5. (1) I and II only
The allied sector is a powerhouse in Rajasthan, often contributing nearly half of the total agricultural Gross State Value Added. Furthermore, the agriculture and allied sectors provide direct employment to over fifty percent of the state's total workforce. However, foodgrain crops generally occupy a larger gross cropped area than commercial crops, making the statement regarding commercial dominance incorrect.

6. (2) Sown in June-July and harvested in September-October
The Kharif cropping season in Rajasthan is closely aligned with the arrival of the southwest monsoon. Farmers typically sow crops like Bajra, Maize, and Moong during June and July when the first rains occur. These crops are then harvested between September and October. This cycle is essential for utilizing natural precipitation in regions with limited artificial irrigation facilities.

7. (1) Both A and R are true and R is the correct explanation of A.
Zaid crops are grown during the hot and dry summer months, usually from March to June. Because rainfall is virtually non-existent during this period in Rajasthan, cultivation is only possible in areas with assured irrigation. Therefore, the necessity of irrigation is a direct consequence of the extreme climatic conditions and lack of natural moisture during the summer season.

8. (1) Barley
Barley is classified as a Rabi crop, which is sown in the winter months of October and November and harvested in spring. In contrast, Bajra, Moth, and Sesamum are all Kharif crops sown during the monsoon season. This distinction is based on the specific temperature and moisture requirements of the crops, with Barley needing cooler conditions for its growth.

9. (3) Mustard - Kharif
Mustard is a major oilseed crop in Rajasthan that is exclusively grown during the Rabi season. It

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requires the cool temperatures and dry weather of winter to thrive and is typically harvested in February or March. Groundnut and various pulses are correctly associated with the Kharif season, while Muskmelon is a typical Zaid crop grown during the summer.

10. (2) III only
Zaid crops in Rajasthan require constant irrigation because they are grown during the peak summer months. It is incorrect to state they are predominantly grown in un-irrigated arid zones. Kharif crops do rely on the southwest monsoon, and Rabi crops benefit from winter showers called Mawath. Wheat and Barley remain the primary cereal staples produced during the winter season.

11. (4) First
Rajasthan holds the top position in India for the production of Bajra, also known as Pearl Millet. The state's vast arid and semi-arid regions provide the necessary environment for this hardy crop. Its ability to grow in sandy soils with minimal water makes it a staple for millions of residents and a key contributor to the agricultural economy.

12. (2) It requires high temperatures and grows well in light, sandy soils with low moisture.
Bajra is a highly resilient crop specifically suited for desert environments. It requires high temperatures for optimal growth and thrives in light, sandy soils that do not retain excessive water. This crop is naturally drought-tolerant, making it ideal for western Rajasthan where annual rainfall is low and the climate is characterized by intense heat and limited moisture.

13. (1) Both Statement I and Statement II are correct, and Statement II explains Statement I.
Western and central districts like Barmer, Jodhpur, and Nagaur are the primary hubs for Bajra cultivation. This geographic concentration exists because the sandy soils and arid climate of these regions provide the perfect ecological conditions for the crop. Bajra's drought resistance and low water requirement allow it to flourish where other cereal crops would likely fail.

14. (1) A-iii, B-ii, C-i, D-iii
The Central Arid Zone Research Institute is located in Jodhpur to address desert farming. The National Research Centre on Seed Spices is situated in Ajmer, focusing on crops like cumin and coriander. The Directorate of Rapeseed-Mustard Research is in Bharatpur, the heart of mustard production. The Pearl Millet Improvement Project is also based in Mandor, near Jodhpur.

15. (1) I, II, III and IV only
Rajasthan contributes over forty percent of India's Bajra production. This hardy crop features a deep root system and exceptional drought tolerance. While dominant in the west, districts like Alwar and Jaipur also produce significant quantities. However, it is primarily grown as a staple food crop and for livestock fodder rather than being classified exclusively as a commercial cash crop.

16. (2) It provides staple food for humans and fodder for livestock.
Bajra is the most widely sown Kharif crop in Rajasthan because it serves a dual purpose. It provides a nutritious staple food for the rural population and essential green and dry fodder for the state's large livestock population. Its ability to survive in low-rainfall areas ensures food and fodder security even during years of moderate drought or erratic monsoons.

17. (2) Eastern and Irrigated Northern Region
Wheat production in Rajasthan is concentrated in the eastern plains and the northern irrigated belt. Districts like Ganganagar, Hanumangarh, Alwar, and Bharatpur lead in output. These areas benefit from fertile alluvial soils and extensive canal or tube-well irrigation. Unlike the arid west, these regions provide the consistent moisture and cool winter temperatures necessary for a successful harvest.

18. (1) It can be highly successfully grown in the shifting sand dunes of western Rajasthan without irrigation.
Wheat is a water-intensive Rabi crop that cannot be grown successfully in shifting sand dunes without significant irrigation. While it is the most extensive winter cereal, it requires cool weather during growth and warmth for ripening. Winter rains, known as Mawath, are beneficial, but the crop fundamentally depends on a steady supply of water through canals or groundwater.

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19. (1) Ganganagar, Hanumangarh, Alwar, Bharatpur
Ganganagar and Hanumangarh are the top wheat-producing districts in Rajasthan due to the extensive canal irrigation system. They are followed by Alwar and Bharatpur in the eastern plains, where fertile soil and groundwater availability support high yields. This order reflects the geographic distribution of irrigation infrastructure and soil fertility across the state's primary wheat-growing regions in the north.

20. (4) It damages the crop by causing freezing injury to plant tissues and reducing yield.
Severe frost in January poses a major threat to wheat crops in eastern Rajasthan. Freezing temperatures cause ice crystals to form within plant tissues, leading to cell rupture and significant physiological damage. This injury hinders the growth of the grain and can drastically reduce the overall yield, especially if the frost occurs during the critical flowering or heading stages.

21. (3) Fertile alluvial (loamy) soil
Fertile alluvial soil, often referred to as loamy soil, is the most suitable medium for wheat cultivation in the eastern plains of Rajasthan. This soil type possesses excellent water-holding capacity and is rich in essential nutrients. Its texture allows for proper root penetration and aeration, which are vital for the healthy development of winter cereals like wheat during the season.

22. (2) Southern and South-Eastern regions like Udaipur and Bhilwara.
Maize cultivation is predominantly localized in the southern and south-eastern parts of Rajasthan. Districts such as Udaipur, Bhilwara, Banswara, and Chittorgarh are the primary producers. These regions provide the required hilly terrain and specific soil conditions, like red loam, along with sufficient rainfall during the Kharif season to support the growth of this important cereal and fodder crop.

23. (4) Mahi Sugandha
Mahi Sugandha is an improved variety of Basmati rice developed for the southern regions of Rajasthan. In contrast, Mahi Kanchan, Mahi Dhawal, and Navjot are all varieties of maize specifically bred to enhance yields in the state's agro-climatic conditions. This distinction is important for understanding the specialized research conducted to improve different cereal crops within the southern plains.

24. (1) A-ii, B-iii, C-iv, D-i
Jowar is largely grown in the semi-arid central districts of Ajmer and Tonk. Maize is the staple of the southern highlands, including Banswara and Udaipur. Wheat thrives in the northern canal-irrigated districts of Ganganagar and Hanumangarh. Bajra remains the dominant crop of the western desert reaches, particularly in Barmer and Jodhpur, where drought-resistant farming is a necessity.

25. (4) I, II and III
Maize is primarily a Kharif crop in Rajasthan that thrives in well-drained loamy soils and requires high temperatures. The red loam soils found in southern districts like Udaipur are particularly suited for its growth. It serves as a vital food source and livestock fodder. All these factors combined make the southern and south-eastern regions the heartland of maize production.

26. (1) It is heat and drought tolerant, often called the 'camel crop'.
Jowar, or Sorghum, is famously known as the 'camel crop' because of its exceptional ability to withstand extreme heat and prolonged periods of drought. It requires less water than many other cereals and can produce grain under stressful conditions. This makes it a highly valuable crop for the semi-arid central regions of Rajasthan where water availability is often inconsistent.

27. (1) Both A and R are true and R is the correct explanation of A.
Rajasthan is a national leader in the production of pulses such as Moong and Moth. These leguminous crops are inherently drought-resistant and have minimal irrigation requirements, allowing them to adapt perfectly to the state's arid climate. Their ability to fix nitrogen also helps maintain soil health in sandy terrains, explaining why they are so extensively cultivated across the state.

28. (2) Bikaner
Bikaner is traditionally recognized as a leading district for the production of Gram, a vital Rabi pulse. The region's soil and climatic conditions,

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(5) Question not attempted

66. Where is the Centre of Excellence for Citrus Fruits located in Rajasthan?
(1) Nanta, Kota
(2) Bassi, Jaipur
(3) Tabiji, Ajmer
(4) Beechwal, Bikaner
(5) Question not attempted

67. The following question consists of two statements, one labeled as Assertion (A) and the other as Reason (R). Select the correct answer using the codes given below:
Assertion (A): Jhalawar is popularly referred to as the 'Nagpur of Rajasthan'.
Reason (R): It is the largest producer of oranges (Santra) in the state, mirroring Nagpur's dominance in Maharashtra.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

68. Which of the following statements about horticulture in Rajasthan is incorrect?
(1) The state is promoting date palm cultivation in arid western districts.
(2) Greenhouses and shade nets are highly subsidized to protect high-value vegetable crops.
(3) Micro-irrigation techniques like drip irrigation are extensively used in fruit orchards.
(4) Horticulture significantly reduces farm income compared to traditional cereal farming.
(5) Question not attempted

69. The term 'Sem' problem in the context of agricultural challenges in northern Rajasthan specifically refers to:
(1) Severe soil erosion caused by high-velocity desert winds.
(2) Destructive infestation of desert locusts in the north.
(3) Waterlogging and soil salinity due to canal irrigation.
(4) Excessive fragmentation of landholdings among farmers.
(5) Question not attempted

70. Consider the following statements regarding the fragmentation of agricultural landholdings in Rajasthan:
I. It makes the deployment of heavy farm machinery like tractors and harvesters economically unviable.
II. It increases the per-hectare cost of cultivation.
III. It encourages large-scale commercial farming over subsistence farming.
IV. It often leads to disputes over boundaries and irrigation water sharing.
Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) I, III and IV
(3) II, III and IV
(4) I, II and III
(5) Question not attempted

71. Which of the following is not a primary cause of soil degradation and desertification in Rajasthan?
(1) Unrestricted overgrazing by livestock
(2) Wind erosion in western arid regions
(3) Deforestation and removal of vegetative cover
(4) Excessive use of organic manure and bio-fertilizers
(5) Question not attempted

72. Consider the following statements and select the correct option:
Statement I: The rapid depletion of groundwater tables is a critical challenge for agriculture in Rajasthan.
Statement II: A vast majority of the blocks in the state are categorized as 'over-exploited' or 'dark zones' regarding groundwater extraction.
(1) Both Statement I and Statement II are correct, and Statement II is the result of Statement I.
(2) Both Statement I and Statement II are correct, but they are completely unrelated.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.

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38. (2) Cool temperature and dry climate in October-November.
The most appropriate time for sowing mustard in Rajasthan is during October and November. This period provides the cool temperatures and dry climatic conditions necessary for successful germination and early vegetative growth. Sowing during the extreme heat of summer or the heavy rains of the monsoon would be detrimental to the seeds, as mustard is strictly a cool-season crop.

39. (1) I, II, III, IV
Bikaner has emerged as the leading producer of groundnut in Rajasthan, particularly in the Lunkaransar area. It is followed by Jodhpur and Jaipur, which also have significant areas under cultivation. Dungarpur in the south produces groundnut but at a lower total volume compared to the major northern and central hubs. This ranking reflects the recent expansion of groundnut farming.

40. (1) Chittorgarh and Bhilwara produce it using red and black soils.
In southern Rajasthan, districts like Chittorgarh and Bhilwara are notable for groundnut cultivation. Farmers in these areas utilize the local red and black soils, which provide suitable conditions for the crop during the Kharif season. Unlike the irrigated northern tracts, groundnut here relies more on seasonal rainfall, though it remains a significant contributor to the regional agricultural output.

41. (3) Pink bollworm
The pink bollworm is a major pest specifically associated with cotton crops, not groundnut. Groundnut cultivation in Rajasthan is frequently threatened by the white grub, tikka disease, and collar rot. Identifying the correct pests is crucial for farmers to implement effective crop protection strategies and prevent significant yield losses in the state's diverse oilseed and fiber crop sectors.

42. (1) Lunkaransar
Lunkaransar, located in the Bikaner district, is famously called the 'Rajkot of Rajasthan'. This title is earned due to its exceptionally high production and the superior quality of groundnut grown in the region. The development of irrigation facilities in this arid belt has transformed it into a major commercial hub for groundnut, mimicking the importance of Rajkot in Gujarat's agriculture.

43. (4) It facilitates the penetration of 'pegs' for pod formation.
Loose and friable sandy loam soil is essential for groundnuts because the plant undergoes a process called 'pegging'. After pollination, the flower stalks must grow downward and penetrate the soil to develop pods underground. Hard or compacted soil would prevent this penetration, leading to poor pod formation. Well-drained soil also prevents the rotting of the developing pods in the ground.

44. (1) A-ii, B-i, C-iii, D-iv
American Cotton, often called Narma, is the mainstay of Ganganagar and Hanumangarh. Malvi Cotton is grown in the south-eastern districts like Jhalawar and Kota. Desi Cotton is common in Udaipur and Chittorgarh. Bikaneri Narma is specifically cultivated in the irrigated tracts of Bikaner. These varieties are selected based on the regional availability of water and specific soil types across Rajasthan.

45. (2) II and III only
American Cotton in the Ganganagar-Hanumangarh belt is highly dependent on canal irrigation and is not a rainfed crop. It is preferred because it possesses longer fibers or staples than indigenous varieties. The availability of water from the Indira Gandhi and Gang Canals has successfully transformed this northern region into the state's leading producer of this high-value commercial fiber crop.

46. (2) Statement I is correct, but Statement II is incorrect.
The Pink Bollworm remains a major biological threat to cotton farming in northern Rajasthan, causing significant damage to the bolls. While Bt Cotton was introduced to resist certain pests, it has not permanently eradicated all issues, as pests can develop resistance over time and other non-target pests may emerge. Constant monitoring and integrated pest management are still required for successful cultivation.

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(3) Mallinath Cattle Fair - Held on the banks of Luni river in Tilwara
(4) Chandrabhaga Fair - Known only for trading Bikaneri camels
(5) Question not attempted

15. Consider the following statements regarding livestock schemes and challenges in Rajasthan:
I. Frequent droughts are a major challenge to animal husbandry.
II. Scarcity of green fodder restricts the genetic potential of milch animals.
III. The government provides free veterinary medicines under the Mukhyamantri Pashudhan Nischulk Dawa Yojana.
IV. Mobile veterinary units have been introduced to cover remote villages.
V. Pashu Bima Yojana aims to provide insurance cover against the death of livestock.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, IV and V only
(3) I, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

16. During periods of severe drought in Rajasthan, which of the following is the most immediate adaptive effect observed among traditional livestock rearers?
(1) Complete shift from livestock rearing to intensive cash crop farming within the arid zone
(2) Mass migration of pastoralists with herds to neighboring states
(3) Abandonment of indigenous breeds in favor of importing exotic cattle from European regions
(4) Immediate transition to commercial poultry farming using modern industrial housing systems
(5) Question not attempted

17. Which of the following statements correctly identifies the Gir cattle breed in Rajasthan?
(1) It is a draft breed native to the Thar desert
(2) It is locally called Ajmera or Renda and found in central districts
(3) It has a distinctive pure white coat and extremely short horns
(4) It is recognized as the lowest milk-yielding breed in the state
(5) Question not attempted

18. Match the following livestock fairs in List I with their corresponding locations/districts in List II.
List I: (Fair)
A. Pushkar Fair
B. Mallinath Fair
C. Ramdev Cattle Fair
D. Gogamedi Fair
List II: (Location)
i. Nagaur
ii. Hanumangarh
iii. Ajmer
iv. Barmer (Tilwara)
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

19. The Rathi breed of cattle, highly valued for milk production in Rajasthan, is generally considered to have evolved through the mixture of which breeds?
(1) Indigenous Gir and Malvi cattle varieties
(2) Desert Nagori and Kankrej cattle varieties
(3) Sahiwal, Red Sindhi, and Tharparkar
(4) Haryanvi and Mewati cattle varieties
(5) Question not attempted

20. Identify the incorrect statement regarding the camel in Rajasthan.
(1) It is commonly referred to as the ship of the desert due to its adaptation to arid conditions
(2) Camel milk is known for its high vitamin C content and therapeutic properties
(3) The state government has enacted legislation to prohibit the slaughter and unauthorized export of camels
(4) The National Research Centre on Camel is located in Jodhpur
(5) Question not attempted

21. Which of the following pairs correctly contrasts the Marwari and Sirohi goat breeds?
(1) Marwari is primarily a meat breed, while Sirohi is completely restricted to milk production

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The fertile black and alluvial soils, combined with adequate irrigation facilities, make this plateau ideal for the large-scale production of high-quality coriander. The region contributes significantly to both the domestic spice market and the state's agricultural export earnings.

57. (3) Cardamom (Elaichi)
Cardamom is a tropical plantation crop that requires high rainfall and specific high-altitude forest conditions, which are not present in Rajasthan. Conversely, Rajasthan is a leading producer of seed spices like Cumin and Fenugreek, and also grows large quantities of Garlic. The state's dry climate is perfectly suited for these seed and bulb spices, but entirely unsuitable for cardamom cultivation.

58. (1) Both Statement I and Statement II are correct, and Statement II explains Statement I.
Nagaur is historically famous for its high-quality Fenugreek, particularly the variety known as Kasuri or Pan Methi. The specific soil composition and the dry, sunny climate of the region contribute to the intense aroma and flavor that make this produce globally renowned. This unique environmental combination ensures that Nagaur remains the premier location for producing this highly sought-after aromatic spice.

59. (1) Jalore, Barmer, Jodhpur
The western districts of Jalore, Barmer, and Jodhpur are the top producers of Cumin in Rajasthan. Jalore typically leads the production due to its favorable sandy loam soils and traditional expertise in cumin farming. These three districts form the core of the cumin-growing belt in the state, benefiting from the specific arid winter conditions required for this sensitive spice crop.

60. (2) Blight and frost at flowering can cause crop failure.
Cumin is one of the most sensitive crops grown in Rajasthan. It is highly susceptible to fungal diseases like blight and can be severely damaged by winter frost during its flowering stage. Either of these factors can lead to complete crop failure within a short period. Therefore, cumin farming is considered a high-risk, high-reward enterprise for the farmers in the western districts.

61. (3) Red Rot
Red Rot is a major disease specifically affecting sugarcane, characterized by the reddening of the internal stalk tissues. In contrast, Cumin in western Rajasthan is frequently plagued by Blight, Powdery Mildew, and Wilt. These fungal diseases are the primary threats to cumin yields and require careful management and chemical treatment to prevent widespread loss of the valuable spice harvest.

62. (4) The cool, dry winter climate with light sandy-loam soils of this region is ideal for its growth.
Cumin is concentrated in Jalore, Barmer, and Jodhpur because these districts provide the perfect ecological niche. The crop requires cool, dry winter weather and light, well-drained sandy loam soils to thrive. It is very sensitive to moisture and humidity, which can trigger fungal diseases. The arid environment of western Rajasthan naturally minimizes these risks, making it the most suitable region.

63. (1) Uprooting plants early to prevent shattering of dry seeds.
Harvesting cumin requires precise timing to maintain export quality. Farmers must uproot or cut the plants as soon as they turn yellowish-brown to prevent the 'shattering' of the small, dry seeds. If left too long in the field, the seeds will fall off easily, leading to significant yield loss. Proper drying and careful threshing are also critical to preserve the aroma.

64. (1) A-iv, B-ii, C-i, D-iii
Kinnow is the pride of Ganganagar and Hanumangarh. Oranges are the staple of Jhalawar, known as the state's citrus hub. Guava production is highly concentrated in Sawai Madhopur, while Pomegranate cultivation has seen rapid growth in the arid districts of Barmer and Jalore through drip irrigation. This match illustrates the diverse fruit-growing regions of Rajasthan.

65. (1) I and II only
Kinnow is a successful citrus hybrid that thrives in the northern irrigated plains of Ganganagar and Hanumangarh. These districts produce the bulk of the state's Kinnow, benefiting from canal water and suitable soils. However, it does not grow well in the non-irrigated sand dunes

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(5) Question not attempted

29. Identify the constraint that is NOT directly related to the challenges of animal husbandry in Rajasthan.
(1) Progressive degradation of common village grazing lands
(2) Frequent occurrences of severe drought and regional famine
(3) Frequent occurrence of severe waterlogging in the Thar desert
(4) Chronic shortage of high-quality green fodder year-round
(5) Question not attempted

30. Consider the following statements about the role of livestock in Rajasthan:
I. Livestock contributes significantly to the State Gross Domestic Product (SGDP).
II. Animal husbandry provides draft power for agricultural operations.
III. Livestock rearing creates unemployment among marginal farmers.
IV. Organic manure from livestock supports soil fertility.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III only
(3) II and IV only
(4) I and IV only
(5) Question not attempted

31. Which of the following statements correctly describes the Haryanvi cattle breed?
(1) It is a dual-purpose breed utilized for both milk and draft work
(2) It is exclusively found in the southern tip of the Rajasthan state
(3) It produces the highest milk volume of all indigenous cattle breeds
(4) It has no draft utility and is maintained solely for meat production
(5) Question not attempted

32. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): The camel population in Rajasthan has witnessed a steady decline over the last two decades.
Reason (R): Increased mechanization of agriculture and the expansion of modern transport networks have reduced the utility of camels as draft and transport animals.
(1) Both (A) and (R) are true and (R) is the correct explanation of (A).
(2) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(3) (A) is true but (R) is false.
(4) (A) is false but (R) is true.
(5) Question not attempted

33. Which livestock species is commonly referred to as the "poor man's cow" in the rural economy of Rajasthan?
(1) Sheep
(2) Goat
(3) Donkey
(4) Camel
(5) Question not attempted

34. What is the primary cause for the Marwari sheep having the highest population among all sheep breeds in Rajasthan?
(1) It is resistant to diseases and survives climatic stress and drought
(2) It produces the finest quality apparel wool matching the Merino breed
(3) It is heavily subsidized by the central government exclusive of other breeds
(4) It yields the highest quantity of mutton per animal globally
(5) Question not attempted

35. Consider the following statements regarding sheep and wool production in Rajasthan:
I. Rajasthan accounts for more than 30 percent of the total wool production in India.
II. The Chokla breed is often called the Indian Merino.
III. Asia's largest wool market is located in Bikaner.
IV. The Marwari breed's wool is extensively used for manufacturing carpets.
V. The Central Wool Development Board is headquartered in Jodhpur.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, IV and V only
(3) I, III, IV and V only
(4) I, II, III, IV and V

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river belt in Dholpur and Sawai Madhopur. Fluoride contamination is a notorious problem in the 'Banka Patti' belt of Nagaur and Ajmer, affecting both health and irrigation.

75. (1) I, III and IV only
The Mukhyamantri Krishak Sathi Yojana provides social security to farmers and laborers. It offers financial assistance of up to ₹2 Lakh in case of accidental death or disability during farm work, including machinery accidents or electrocution. It is not limited to commercial crop farmers and does not primarily focus on distributing free micro-irrigation equipment, though other state schemes may cover those needs.

76. (2) 2022-23
The Rajasthan Millets Mission was prominently announced in the state budget for the financial year 2022-23. The mission aims to promote the production, consumption, and value addition of millets like Bajra and Jowar. By establishing processing units and providing incentives to farmers, the state seeks to leverage its position as a leading millet producer to enhance nutritional security and farmers' income.

77. (3) Bhaloji, Jaipur set up the first solar power plant under the scheme.
Rajasthan has been a leader in implementing the PM-KUSUM scheme, which focuses on solarizing the agricultural sector. The first solar power plant under Component-A of this scheme was commissioned at Bhaloji village in Jaipur. This initiative allows farmers to generate solar energy on barren land, providing them with a steady source of income while promoting the use of clean energy for irrigation.

78. (4) Tarbandi Yojana - Distributing high-yielding seeds to marginal farmers.
The Tarbandi Yojana is incorrectly matched; its primary objective is to provide financial assistance to farmers for fencing their fields with barbed wire to protect crops from stray animals. Other schemes are correctly described: the Agro-processing policy promotes exports, Diggi Nirman supports water storage in canals, and the Krishak Sathi Yojana provides aid for accidents during farming activities.

79. (2) III, I, II
The Mukhyamantri Seed Multiplication Village Scheme was launched earlier to ensure seed self-sufficiency. This was followed by the Rajasthan Agro-processing, Agri-business and Agri-export Promotion Policy in 2019 to boost value addition. The Rajasthan Millets Mission is the most recent initiative, announced in the 2022-23 budget to specifically promote the state's millet sector during the International Year of Millets.

80. (2) Increase income by building supply chains and encouraging value addition.
The primary aim of the 2019 Agro-processing Policy is to enhance the income of farmers by developing robust supply chains and encouraging the value addition of agricultural produce. It provides incentives for setting up processing units and infrastructure for exports. This shift from selling raw produce to processed goods is designed to make Rajasthan's agriculture more profitable and globally competitive.

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of Jaisalmer, as citrus fruits require consistent moisture and managed irrigation to produce high-quality fruit.

66. (1) Nanta, Kota
The Centre of Excellence for Citrus Fruits is established at Nanta in the Kota district. This facility focuses on research, the development of high-quality saplings, and training farmers in advanced horticultural techniques. By promoting citrus cultivation in the south-eastern region, the centre aims to diversify agricultural income and improve the productivity of fruits like oranges and mandarins across Rajasthan.

67. (1) Both A and R are true and R is the correct explanation of A.
Jhalawar is known as the 'Nagpur of Rajasthan' specifically because it is the state's leading producer of oranges. Its climate and soil are remarkably similar to those of Nagpur in Maharashtra, allowing for the large-scale cultivation of Santra. This regional dominance in orange production makes the comparison geographically and economically appropriate, highlighting Jhalawar's status as a major citrus hub.

68. (4) Horticulture significantly reduces farm income compared to traditional cereal farming.
On the contrary, horticulture is being promoted in Rajasthan because it significantly increases farm income compared to traditional cereal farming. High-value fruits and vegetables provide better returns per unit of land and water. The state supports this shift through subsidies for greenhouses, drip irrigation, and the introduction of new crops like date palms in arid regions to improve rural prosperity.

69. (3) Waterlogging and soil salinity due to canal irrigation.
The 'Sem' problem refers to the twin issues of waterlogging and soil salinity that have emerged in the canal command areas of northern Rajasthan. Over-irrigation and poor drainage cause the water table to rise, bringing dissolved salts to the surface through capillary action. This degrades the soil quality, making large tracts of once-productive land unfit for cultivation unless expensive reclamation measures are taken.

70. (1) I, II and IV
Fragmentation of landholdings into small, scattered plots makes using heavy machinery like harvesters uneconomical and increases the overall cost of cultivation per hectare. It also frequently leads to legal and social disputes regarding field boundaries and the sharing of irrigation water. Fragmentation is a barrier to large-scale commercial farming and often traps farmers in a cycle of subsistence-level production.

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71. (4) Excessive use of organic manure and bio-fertilizers
The use of organic manure and bio-fertilizers actually improves soil health and structure, making it a solution rather than a cause of degradation. Soil degradation in Rajasthan is primarily driven by unrestricted overgrazing, wind erosion in the desert, and the removal of natural vegetative cover. These factors accelerate desertification and reduce the fertility and water-holding capacity of the land.

72. (1) Both Statement I and Statement II are correct, and Statement II is the result of Statement I.
The rapid depletion of groundwater is a major crisis for Rajasthan's agriculture, as farmers increasingly rely on tube wells. This excessive extraction has led to a situation where most blocks in the state are now categorized as 'over-exploited' or 'dark zones'. The depletion is a direct result of unsustainable water use, threatening the long-term viability of farming in areas without canal.

73. (3) Capillary action bringing salts to the surface via waterlogging.
In the Indira Gandhi Canal command area, the introduction of large volumes of water into a desert environment has caused the water table to rise. As this water moves upward through capillary action in the soil, it carries dissolved underground salts to the surface. When the water evaporates, these salts are left behind, gradually increasing soil salinity and creating the 'Sem' problem.

74. (1) A-ii, B-iii, C-iv, D-i
Waterlogging is a major issue in the irrigated north. Wind erosion is most severe in the arid western districts of Jaisalmer and Barmer. Ravine or gully erosion is a hallmark of the Chambal

(1) Chokla
(2) Marwari
(3) Magra
(4) Murrah
(5) Question not attempted

8. Match the livestock breeds in List I with their corresponding prominent regions in List II.
List I: (Breed)
A. Rathi
B. Gir
C. Haryanvi
D. Nagori
List II: (Region)
i. Ajmer and Bhilwara
ii. Sikar and Jhunjhunu
iii. Bikaner and Ganganagar
iv. Nagaur and Jodhpur
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

9. What is Rajasthan's approximate rank in total wool production in India, highlighting its national significance?
(1) First
(2) Second
(3) Third
(4) Fourth
(5) Question not attempted

10. Consider the following statements regarding buffalo breeds in Rajasthan:
I. Murrah is considered the best dairy breed of buffalo in the state.
II. Surti buffaloes are primarily found in the southern districts like Dungarpur and Banswara.
III. Buffaloes are most concentrated in the extremely arid western districts of Jaisalmer and Barmer.
IV. The Murrah breed is easily identified by its tightly curled horns.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III only
(3) II and IV only
(4) I, III and IV only
(5) Question not attempted

11. The Marwari breed of horse holds significant historical and cultural value in Rajasthan. Which distinct physical characteristic is most commonly associated with the Marwari horse?
(1) A naturally occurring and purely white coat found in all members of the equine breed
(2) Extremely short and stocky legs adapted for climbing the steep Aravalli mountains
(3) Complete absence of a mane and tail hair as a result of local desert adaptation
(4) Inward-turning ear tips that often touch each other at the apex
(5) Question not attempted

12. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): The cooperative dairy development model in Rajasthan has a three-tier structure.
Reason (R): The three-tier structure ensures that grassroot milk producers at the village level are directly connected to the state-level federation.
(1) Both (A) and (R) are true and (R) is the correct explanation of (A).
(2) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(3) (A) is true but (R) is false.
(4) (A) is false but (R) is true.
(5) Question not attempted

13. Backyard poultry farming in the context of rural Rajasthan is best defined as:
(1) Large-scale commercial rearing of exotic bird breeds in controlled and automated systems
(2) Government-owned poultry estates dedicated exclusively to serving international export markets
(3) Rearing small flocks for supplementary income and family nutrition
(4) Seasonal rearing of migratory aquatic birds within temporary wetland or lake enclosures
(5) Question not attempted

14. Which of the following livestock fairs is NOT correctly matched with its significance or location?
(1) Pushkar Fair - Held in Ajmer district
(2) Ramdev Cattle Fair - Held in Nagaur district

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47. (1) Both A and R are true and R is the correct explanation of A.
Sri Ganganagar and Hanumangarh lead Rajasthan in cotton production because they possess the two most critical requirements: fertile alluvial soil and an assured supply of canal irrigation. The dry climate of the north is also conducive to cotton growth provided water is available. This synergy between infrastructure and natural resources explains the regional concentration of the state's fiber production.

48. (2) Extremely shallow, gravelly desert soil
Cotton requires deep, fertile soils with good moisture-retention capabilities to support its extensive root system and heavy nutrient needs. Extremely shallow, gravelly desert soils are the least suitable as they lack sufficient depth and nutrients. In contrast, medium black soil and alluvial soils are excellent for cotton because they provide the necessary physical and chemical environment for high-quality fiber production.

49. (2) Chittorgarh and Bundi
Sugarcane cultivation in Rajasthan is primarily concentrated in districts like Chittorgarh and Bundi. These areas have relatively better water availability and suitable soil conditions compared to the western desert. While sugarcane is grown in small pockets elsewhere, these districts provide the necessary environment for this water-intensive and long-duration crop, which is often linked to local sugar mill operations.

50. (2) I, II and IV
Sugarcane is a long-duration crop that requires constant irrigation for nearly a year, making it difficult to sustain in water-scarce Rajasthan. It is also highly susceptible to frost, which limits its growth in northern areas. The arid climate of the west does not accelerate its growth; instead, the extreme heat and lack of humidity are major environmental hurdles for farming.

51. (3) The Mewar Sugar Mills - Bhopal Sagar (Chittorgarh)
The Mewar Sugar Mills is located at Bhopal Sagar in the Chittorgarh district and was the first sugar mill established in Rajasthan. Other matches are incorrect; for example, the Rajasthan State Ganganagar Sugar Mills is located in Sri Ganganagar, and Keshoraipatan Sahakari Sugar Mills is in Bundi. These mills were historically important for processing the sugarcane grown in their command areas.

52. (4) Hot winds (Loo) during summer are beneficial for sucrose accumulation.
Hot, dry winds known as 'Loo' are actually harmful to sugarcane as they increase transpiration and can dry out the stalks, negatively impacting growth. Sugarcane prefers a humid, subtropical climate. While it needs warmth for growth and is damaged by frost during ripening, the presence of extreme dry winds during the summer is a major climatic constraint rather than a benefit.

53. (3) Depleting groundwater and high irrigation costs make it unviable.
The primary reason for the declining area of sugarcane in Rajasthan is the increasing scarcity and cost of irrigation. As groundwater levels drop and water costs rise, growing a year-long, water-intensive crop like sugarcane becomes economically unviable for most farmers. Many have shifted to less demanding crops or those with shorter growing cycles that offer better returns on limited water resources.

54. (1) A-iii, B-ii, C-i, D-iv
Coriander production is centered in the Hadoti region, specifically Baran and Jhalawar. Fenugreek is a specialty of Nagaur, particularly the fragrant variety. Cumin is the dominant spice of the western districts like Jalore and Barmer. Fennel is largely produced in Sirohi and Tonk. This distribution reflects the specific soil and moisture needs of each spice across Rajasthan's different agricultural zones.

55. (1) I, II, III and V only
Rajasthan is a powerhouse in seed spice production, particularly coriander in Hadoti and the famous Pan Methi in Nagaur. The National Research Centre on Seed Spices in Ajmer provides critical scientific support. However, seed spices are primarily Rabi crops, not Kharif, as they require the cool and dry winter months rather than the heavy rains of the monsoon season.

56. (1) Hadoti plateau
The Hadoti plateau, comprising districts like Baran, Kota, and Jhalawar, is the most dominant region for coriander cultivation in Rajasthan.

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(2) Marwari goats have predominantly white coats, while Sirohi goats have purely black coats
(3) Marwari goats are known for long migration, while Sirohi goats are generally reared without long migration
(4) Marwari is native to southern Rajasthan, while Sirohi is native to the Shekhawati region
(5) Question not attempted

22. Select the correct sequence of the following sheep breeds of Rajasthan based on the fineness and quality of their wool (from finest to coarsest).
(1) Chokla, Magra, Marwari, Malpura
(2) Malpura, Marwari, Magra, Chokla
(3) Marwari, Chokla, Malpura, Magra
(4) Magra, Malpura, Chokla, Marwari
(5) Question not attempted

23. Where is the Central Sheep and Wool Research Institute (CSWRI) located in Rajasthan?
(1) Bikaner
(2) Jodhpur
(3) Vallabhnagar (Udaipur)
(4) Avikanagar (Tonk)
(5) Question not attempted

24. Read the following statements regarding the Murrah buffalo in Rajasthan:
Statement I: The Murrah breed has the highest milk fat percentage among all buffalo breeds globally, reaching up to 13 percent.
Statement II: It is predominantly reared in the eastern and northern districts of Rajasthan such as Alwar, Bharatpur, and Jaipur.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

25. Consider the following statements regarding dairy development in Rajasthan:
I. SARAS is the official brand name of the Rajasthan Cooperative Dairy Federation (RCDF).
II. The cooperative dairy network strictly operates on a two-tier system comprising only village societies and the state federation.
III. RCDF plays a crucial role in providing technical inputs, artificial insemination, and balanced cattle feed to farmers.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

26. Which of the following is the most appropriate reason for Ajmer district being the leading hub of poultry farming in Rajasthan?
(1) Good infrastructure, commercial practices, and market proximity
(2) It features a naturally cold climate suited for raising exotic birds
(3) It lacks all cattle populations, leaving poultry as the only option
(4) It is the only district where the government permits poultry rearing
(5) Question not attempted

27. Which place in Rajasthan is historically famous for hosting a major donkey fair?
(1) Kolayat (Bikaner)
(2) Sam (Jaisalmer)
(3) Deshnoke (Bikaner)
(4) Luniyawas (Jaipur)
(5) Question not attempted

28. Match the livestock breeds in List I with the corresponding animal categories in List II.
List I: (Breed)
A. Nagori
B. Sirohi
C. Chokla
D. Surti
List II: (Animal)
i. Goat
ii. Cattle
iii. Buffalo
iv. Sheep
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i

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CHAPTER 23
Livestock and Animal Husbandry

1. What makes livestock rearing a more reliable economic activity than crop agriculture in the rural economy of Rajasthan?
(1) Livestock rearing requires minimal capital investment and zero infrastructure for marginal farmers
(2) Livestock is more resilient to frequent droughts and erratic monsoon patterns than crops
(3) Crop agriculture in Rajasthan fails to produce any marketable surplus for rural households
(4) Livestock rearing depends entirely on institutional credit facilities which are easily available
(5) Question not attempted

2. Which of the following statements correctly describes the Nagori breed of cattle?
(1) It is a powerful draft breed known for agility and strong physical build
(2) It is exclusively bred for high milk production in eastern regions of Rajasthan
(3) It is a small-sized breed primarily found in the southern tribal belt of the state
(4) It is known for having no horns and possessing a completely black coat color
(5) Question not attempted

3. Read the following statements regarding the Rathi cow:
Statement I: The Rathi breed is often referred to as the Kamdhenu of Rajasthan due to its high milk-yielding capacity.
Statement II: The primary native tract of the Rathi cow is the south-eastern plateau region of Rajasthan.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

4. In which year was the camel officially declared as the State Animal of Rajasthan under the livestock category?
(1) 2012
(2) 2014
(3) 2016
(4) 2018
(5) Question not attempted

5. Consider the following statements regarding camel breeds in Rajasthan:
I. The Bikaneri breed is heavily built and primarily utilized as a draft animal.
II. The Jaisalmeri breed is lightly built and highly regarded for riding and speed.
III. The Balotra breed is predominantly recognized for producing fine wool.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

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6. The Sirohi goat is a prominent breed in Rajasthan. Which of the following features is most characteristic of this breed?
(1) It produces the highest quality pashmina wool among all breeds in the state
(2) It has a compact brown-patched body and is primarily reared for meat
(3) It is exclusively white in color and is maintained strictly for milk production
(4) It is known for continuous migration and cannot be raised under stall-fed conditions
(5) Question not attempted

7. Which of the following is NOT a breed of sheep found in Rajasthan?

(5) Question not attempted

36. Which of the following pairs of buffalo breed and its primary concentration area in Rajasthan is correctly matched?
(1) Murrah - Jaisalmer and Barmer
(2) Bhadawari - Bikaner and Churu
(3) Mehsana - Sikar and Jhunjhunu
(4) Surti - Dungarpur and Banswara
(5) Question not attempted

37. The Marwari breed of horse is highly acclaimed internationally. Which specialized activity is this breed historically and culturally most renowned for?
(1) Heavy draft agricultural ploughing
(2) Carriage of bulk goods in urban areas
(3) Cavalry warfare and equestrian sports
(4) Production of milk for commercial dairies
(5) Question not attempted

38. Match the tiers of the Rajasthan dairy cooperative structure in List I with their corresponding organizational bodies in List II.
List I: (Tier Level)
A. Apex State Level
B. District Level
C. Village Level
D. Commercial Brand
List II: (Organization/Brand)
i. Milk Producer Cooperative Society
ii. SARAS
iii. Rajasthan Cooperative Dairy Federation
iv. District Milk Union
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-iii, B-i, C-iv, D-ii
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

39. According to the traditional Hindu calendar, in which lunar month is the famous Pushkar livestock fair organized?
(1) Chaitra
(2) Shravan
(3) Kartik
(4) Magh
(5) Question not attempted

40. Read the following statements regarding the Mukhyamantri Pashudhan Nischulk Dawa Yojana:
Statement I: The scheme aims to provide essential veterinary medicines free of cost to all livestock owners in Rajasthan.
Statement II: The scheme is entirely funded by the World Bank under international rural development grants.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

41. Which of the following is the most appropriate reason for persistent fodder scarcity in western Rajasthan?
(1) Over-allocation of agricultural land for establishing heavy industries
(2) Cultivation of purely cash crops replacing traditional fodder crops
(3) Erratic rainfall patterns leading to poor growth of natural pastures and grasses
(4) Strict government ban on the cultivation of fodder crops
(5) Question not attempted

42. Arrange the following cattle breeds of Rajasthan in a geographical sequence from North to South based on their primary native tracts:
A. Rathi
B. Nagori
C. Gir (Ajmera)
(1) A, B, C
(2) C, B, A
(3) B, A, C
(4) A, C, B
(5) Question not attempted

43. Which of the following is an odd one out based on the species it belongs to?
(1) Bikaneri
(2) Jaisalmeri
(3) Balotra
(4) Surti

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Reason (R): They possess the highest milk yield and fat content among all indigenous buffalo breeds.
(1) Both (A) and (R) are true and (R) is the correct explanation of (A).
(2) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(3) (A) is true but (R) is false.
(4) (A) is false but (R) is true.
(5) Question not attempted

73. Conservation efforts for the Marwari horse in Rajasthan have recently gained momentum. Which of the following actions demonstrates the practical application of this conservation strategy?
(1) Imposing a blanket ban on the domestic sale of all equines
(2) Replacing all Marwari horses with imported Thoroughbreds for police duties
(3) Promoting the breed in endurance riding, equestrian sports, and heritage tourism
(4) Using the Marwari horse exclusively for meat production
(5) Question not attempted

74. In the context of Rajasthan's animal husbandry sector, what does the abbreviation RCDF stand for?
(1) Rajasthan Cooperative Dairy Federation
(2) Rajasthan Cattle Development Foundation
(3) Regional Centre for Dairy Farming
(4) Rashtriya Camel Development Fund
(5) Question not attempted

75. Consider the following statements regarding the livestock fairs in Rajasthan:
I. The Pushkar fair is held annually in the Ajmer district.
II. The Nagaur fair is famous for the trading of Nagori draft cattle.
III. The Tilwara fair is organized in the Barmer district.
IV. The Tilwara fair is also locally known as the Mallinath ji fair.
V. The Ramdev cattle fair is a prominent event held in Nagaur.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

76. Identify the scheme that is NOT directly related to the development of the animal husbandry or dairy sector in Rajasthan.
(1) Mukhyamantri Pashudhan Nischulk Dawa Yojana
(2) Pradhan Mantri Fasal Bima Yojana
(3) Pashu Bima Yojana
(4) Saras Suraksha Kavach Bima Yojana
(5) Question not attempted

77. Arrange the following administrative steps typically involved in managing fodder scarcity during a drought in sequential order:
A. Establishment of subsidized fodder banks or depots
B. Official assessment and declaration of drought conditions
C. Distribution of fodder to the affected farmers
D. Procurement of fodder from surplus districts or neighboring states
(1) B, D, A, C
(2) A, B, C, D
(3) B, A, D, C
(4) D, B, A, C
(5) Question not attempted

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78. Match the institutions in List I with their primary domain of work in List II.
List I: (Institution)
A. RCDF
B. CSWRI
C. NRCC
D. State Animal Husbandry Department
List II: (Domain)
i. Cooperative dairy and milk processing
ii. Camel research and breed improvement
iii. Sheep and wool research
iv. Veterinary services and disease control
(1) A-i, B-iii, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-i, C-iii, D-ii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

79. The livestock census, which forms the basis for policy making in animal husbandry for

51. Which of the following statements correctly highlights the significance of the Tilwara livestock fair?
(1) It is held in honor of Veer Teja ji and is the largest camel fair in the state
(2) It is organized during the monsoon season to trade solely in dairy buffaloes
(3) It is held on the banks of the Luni river in Barmer and is associated with Mallinath ji
(4) It is situated in the eastern plains and focuses on the Murrah breed
(5) Question not attempted

52. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): The Government of Rajasthan launched Mobile Veterinary Units across various districts.
Reason (R): The primary aim is to provide emergency veterinary services and artificial insemination at the doorstep of livestock owners in remote areas.
(1) Both (A) and (R) are true and (R) is the correct explanation of (A).
(2) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(3) (A) is true but (R) is false.
(4) (A) is false but (R) is true.
(5) Question not attempted

53. Read the following statements about animal husbandry's economic impact:
Statement I: Livestock acts as an economic insurance mechanism for farmers during periods of crop failure.
Statement II: Animal husbandry is completely immune to the effects of monsoon failures and fodder availability.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

54. Which cattle breed of Rajasthan is specifically highly prized across northern India for producing powerful and fast bullocks ideal for agricultural and carting operations?
(1) Rathi
(2) Nagori
(3) Sahiwal
(4) Tharparkar
(5) Question not attempted

55. Consider the following statements regarding the camel in Rajasthan:
I. It was granted the status of State Animal in 2014.
II. The Bikaneri breed possesses a distinctive depression on the skull known as a 'stop'.
III. The Jaisalmeri camel is relatively faster and preferred for riding.
IV. The National Research Centre on Camel is located in Bikaner.
V. Camel milk contains insulin-like proteins beneficial for diabetic patients.
Which of the above statement(s) is/are correct?
(1) I, III and IV only
(2) II, IV and V only
(3) I, II, III and V only
(4) I, II, III, IV and V
(5) Question not attempted

56. Which of the following pairs of goat breeds and their primary utilities in Rajasthan is correctly matched?
(1) Sirohi - Reared for meat; known for rapid body weight gain
(2) Marwari - Reared solely for fine and soft apparel wool production
(3) Barbari - The heaviest draft goat breed found in the Thar desert
(4) Jamnapari - Native exclusively to the shifting Jaisalmer sand dunes
(5) Question not attempted

57. What is the most appropriate reason for the annual summer migration of sheep flocks from western Rajasthan to neighboring states?
(1) To participate in inter-state livestock fairs for competitive breeding
(2) To escape extreme cold waves that strike the Thar desert in summer
(3) Search for grazing and water as local vegetation dries up

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ANSWERS

1. (2) Livestock is more resilient to frequent droughts and erratic monsoon patterns than crops
Livestock rearing serves as a stable economic pillar in rural Rajasthan because animals possess greater natural resilience to harsh environmental conditions compared to traditional crops. While agriculture often fails due to erratic monsoons and recurring droughts, livestock provides a continuous source of income through products like milk and wool.

2. (1) It is a powerful draft breed known for agility and strong physical build
The Nagori breed is one of the most famous cattle varieties in India, primarily recognized for its excellent draft qualities. These animals possess a powerful build, agility, and immense strength, making them ideal for heavy agricultural work and pulling carts. Native to the Nagaur region, they are highly valued by farmers for their physical endurance.

3. (3) Statement I is correct but Statement II is incorrect
The Rathi cow is celebrated as the Kamdhenu of Rajasthan due to its exceptional milk-yielding capacity and adaptability to arid environments. However, its primary native tract is not the south-eastern plateau but the north-western parts of the state, including Bikaner and Ganganagar. This breed is a result of crossing Sahiwal, Red Sindhi, and Tharparkar cattle.

4. (2) 2014
The Government of Rajasthan officially declared the camel as the State Animal under the livestock category in 2014 to ensure its conservation and protection. This decision highlighted the animal's immense cultural and economic significance to the desert ecosystem. Legal measures were also introduced to prevent the illegal slaughter and unauthorized migration of camels to other states.

5. (1) I and II only
The Bikaneri camel is recognized for its heavy build and superior strength as a draft animal, while the Jaisalmeri breed is valued for its lighter frame, speed, and suitability for riding. Statement III is incorrect because Balotra is not recognized as a fine wool sheep breed; that distinction typically belongs to the Chokla breed in Rajasthan.

6. (2) It has a compact brown-patched body and is primarily reared for meat
The Sirohi goat is a versatile breed characterized by its compact body and distinctive brown patches. It is predominantly reared for meat production due to its rapid growth and weight gain capabilities. Unlike migratory breeds, Sirohi goats are well-suited for stall-fed conditions, making them popular among commercial goat farmers for intensive rearing in semi-arid regions.

7. (4) Murrah
Chokla, Marwari, and Magra are prominent sheep breeds native to Rajasthan, each known for specific wool qualities. In contrast, Murrah is a world-renowned breed of buffalo, not sheep. It is famous for high milk production and is characterized by its jet-black color and tightly curled horns. Buffaloes belong to a different livestock species than sheep.

8. (1) A-iii, B-i, C-ii, D-iv
Livestock breeds in Rajasthan are geographically distributed based on their native tracts. The Rathi breed is found in Bikaner and Ganganagar, while Gir cattle are concentrated in Ajmer and Bhilwara. Haryanvi cattle are common in Sikar and Jhunjhunu districts. The powerful Nagori draft breed is natively located in the Nagaur and Jodhpur regions of the state.

9. (1) First
Rajasthan holds the top position in total wool production in India, contributing a significant percentage to the national output. The state's large sheep population and specialized breeds, such as the Chokla and Marwari, drive this dominance. This production supports a massive wool industry, including Asia's largest wool market in Bikaner, reinforcing Rajasthan's status as a wool hub.

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(1) I and II only
(2) III only
(3) I and III only
(4) II only
(5) Question not attempted

66. The Rathi cattle breed is highly adapted to the harsh, arid conditions of western Rajasthan. What evolutionary factor best explains this hardiness combined with high milk yield?
(1) Selective breeding with Sindhi and Sahiwal in Bikaner region
(2) Crossbreeding with European dairy breeds like Holstein Friesian in the late 19th century
(3) Adaptation to the high altitude mountainous terrains of the central Aravalli range
(4) Exclusive stall feeding in controlled temperature sheds over several generations
(5) Question not attempted

67. Which of the following statements correctly identifies the origin of the Bikaneri camel?
(1) It was developed by crossing Arabian and Bactrian camels
(2) It is a purely wild species naturally domesticated in the Thar desert without human intervention
(3) It was developed by crossing Sindhi and Baluchi camel strains
(4) It originated from the high-altitude deserts of Ladakh
(5) Question not attempted

68. Match the descriptive titles in List I with the corresponding livestock breeds/species in List II.
List I: (Title)
A. Indian Merino
B. Ship of the Desert
C. Poor Man's Cow
D. High Fat Milk Producer
List II: (Breed/Species)
i. Camel
ii. Goat
iii. Chokla Sheep
iv. Murrah Buffalo
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-ii, C-iv, D-i
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

69. For which of the following performance traits is the Sirohi goat specifically favored by commercial rearers in Rajasthan?
(1) Maximum twin and triplet birth rate globally
(2) Production of the highest volume of milk among all Indian goat breeds
(3) Exceptionally rapid body weight gain making it ideal for the meat market
(4) Yielding fine undercoat fibers used for pashmina shawls
(5) Question not attempted

70. Consider the following statements regarding sheep and wool in Rajasthan:
I. Sheep shearing in the state is typically conducted twice a year.
II. Marwari is the most numerous sheep breed in Rajasthan.
III. The Chokla breed produces the finest quality wool in the state.
IV. Rajasthan consistently ranks first in wool production in India.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

71. Which of the following is NOT a characteristic of the overall wool production sector in Rajasthan?
(1) The state is the largest producer of wool in the country
(2) A significant portion of the wool produced is of carpet-grade quality
(3) Bikaner serves as a major grading and marketing hub for wool
(4) State produces mainly ultra-fine apparel-grade Merino wool
(5) Question not attempted

72. The following question consists of two statements — Assertion (A) and Reason (R). Answer the question by selecting the appropriate option.
Assertion (A): Murrah buffaloes command a premium price in the livestock markets of Rajasthan.

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(5) Question not attempted

44. Identify the incorrect statement regarding goat rearing in Rajasthan.
(1) The state holds a significant share of the total goat population in India
(2) The Sirohi breed is primarily reared for producing fine pashmina wool
(3) Goats are well adapted to harsh climatic conditions and sparse vegetation
(4) Goat rearing provides continuous liquidity and acts as a financial buffer for poor households
(5) Question not attempted

45. Consider the following statements regarding sheep rearing in Rajasthan:
I. The Chokla breed is predominantly found in the Shekhawati region.
II. The Marwari sheep is known exclusively for producing fine apparel-grade wool.
III. The sheep population density is highest in the humid eastern districts of Rajasthan.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

46. Which city in Rajasthan is recognized as hosting Asia's largest wool market (mandi)?
(1) Jaipur
(2) Jodhpur
(3) Udaipur
(4) Bikaner
(5) Question not attempted

47. Why is buffalo rearing more successful and concentrated in the eastern and south-eastern parts of Rajasthan compared to the west?
(1) Higher water and fodder needs, more available in eastern regions
(2) The state government prohibits buffalo rearing in western districts of Rajasthan
(3) Eastern Rajasthan has extremely cold winters suited for buffalo physiology
(4) The Murrah breed evolved natively in the Aravalli hills of the central region
(5) Question not attempted

48. Match the livestock research institutions in List I with their locations in List II.
List I: (Institution)
A. Central Sheep and Wool Research Institute
B. National Research Centre on Camel
C. RCDF Headquarters
D. Buffalo Research and Breeding Centre
List II: (Location)
i. Bikaner
ii. Jaipur
iii. Vallabhnagar
iv. Avikanagar
(1) A-iv, B-i, C-ii, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

49. Which of the following is NOT a core objective or function of the Rajasthan Cooperative Dairy Federation (RCDF)?
(1) Procurement of milk through village cooperative societies
(2) Direct retail sale of raw milk by farmers at city junctions
(3) Processing and marketing of milk products under the SARAS brand
(4) Supplying balanced cattle feed and veterinary services to milk producers
(5) Question not attempted

50. Consider the following statements regarding poultry farming in Rajasthan:
I. Poultry farming provides critical supplementary income and nutritional security to rural households.
II. Ajmer is recognized as the egg bowl of Rajasthan due to its high poultry concentration.
III. Traditional backyard desi breeds yield significantly more eggs annually than improved commercial breeds.
IV. Poultry manure is highly valued as organic fertilizer rich in nitrogen.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, II and IV only
(3) II, III and IV only
(4) I, III and IV only
(5) Question not attempted

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Rajasthan and the rest of India, is conducted every how many years?
(1) 3 years
(2) 5 years
(3) 10 years
(4) 15 years
(5) Question not attempted

80. Identify the incorrect statement regarding the Gir cattle breed in Rajasthan.
(1) It is recognized as a prominent and high-yielding milch breed in the state
(2) Native to the western districts of Jaisalmer and Barmer
(3) It is commonly found in central districts like Ajmer and Bhilwara regions
(4) It features a convex forehead and long ears as part of its physical build
(5) Question not attempted

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in a breed that is exceptionally hardy and capable of high milk production under desert conditions. Primarily found in the Bikaner region, its ability to thrive on minimal resources while providing significant milk has earned it great local acclaim.

20. (4) The National Research Centre on Camel is located in Jodhpur
While camels are the ships of the desert and their milk has therapeutic value, the National Research Centre on Camel is actually located in Bikaner, not Jodhpur. The center focuses on breed improvement, health, and value-added products like camel milk powder. The state government has also passed laws to protect camels by banning their slaughter and unregulated export.

21. (3) Marwari goats are known for long migration, while Sirohi goats are generally reared without long migration
Marwari goats are hardy and adapted for long-distance migration in search of fodder across arid zones. In contrast, Sirohi goats are more stationary and are frequently raised under stall-fed conditions or within a limited local range. Both are meat breeds, but their management practices differ significantly based on their native environmental adaptations and their physiological responses to migration.

22. (1) Chokla, Magra, Marwari, Malpura
Sheep breeds in Rajasthan vary greatly in wool quality. Chokla produces the finest wool, often compared to the Merino breed, making it ideal for apparel. Magra produces medium-fine wool, while Marwari wool is coarser and mainly used for carpets. Malpura wool is the coarsest among these, typically used for making rough blankets and felts, reflecting its primary regional utility.

23. (4) Avikanagar (Tonk)
The Central Sheep and Wool Research Institute is a premier national research organization located in Avikanagar, Tonk district. Established to enhance sheep productivity through scientific research in breeding, nutrition, and health, it plays a vital role in the development of the wool industry. The institute works on improving both carpet-grade and apparel-grade wool quality for the benefit of farmers.

24. (4) Statement I is incorrect but Statement II is incorrect
While Murrah buffaloes are renowned for high milk fat, stating it reaches thirteen percent is a significant exaggeration, as the average is typically much lower. However, Statement II is correct as the breed is predominantly found in eastern and northern Rajasthan. This region provides the necessary water and fodder resources required to maintain the high productivity of these animals.

25. (3) I and III only
SARAS is the well-known commercial brand under which the Rajasthan Cooperative Dairy Federation markets its products. The federation provides essential technical inputs and cattle feed to farmers to improve productivity. Statement II is incorrect because the dairy cooperative system in the state functions on a three-tier structure, not a two-tier one, incorporating village, district, and state levels.

26. (1) Good infrastructure, commercial practices, and market proximity
Ajmer has emerged as Rajasthan's poultry hub due to its excellent transport infrastructure and proximity to major markets like Jaipur and Delhi. The adoption of modern commercial farming practices and the presence of organized supply chains for feed and medicine have further boosted production. This development has led to the district being colloquially referred to as the state's egg bowl.

27. (4) Luniyawas (Jaipur)
Luniyawas, a village near Jaipur, is historically renowned for hosting one of the largest donkey fairs in India. This traditional event attracts traders from across Rajasthan and neighboring states to buy and sell donkeys and mules. These animals remain essential for transport and brick-kiln operations, and the fair serves as a significant cultural and commercial gathering for donkey owners.

28. (1) A-ii, B-i, C-iv, D-iii
Livestock breeds are categorized by their species and utility. Nagori is a famous cattle breed known for draft power. Sirohi is a prominent goat breed used for meat. Chokla is a sheep breed celebrated for its fine wool quality. Surti is a buffalo breed found in southern Rajasthan, highlighting the

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10. (2) III only
Buffaloes require significant water and green fodder, making them more successful in the eastern and southern parts of Rajasthan rather than the arid west. While Murrah is indeed a top dairy breed and Surti is found in southern districts, buffaloes are not concentrated in Jaisalmer or Barmer. These western districts are more suitable for hardy cattle, sheep, and camels.

11. (4) Inward-turning ear tips that often touch each other at the apex
The Marwari horse is globally distinguished by its unique physical feature of inward-curving ears that frequently meet at the tips. This ancient breed is celebrated for its bravery, endurance, and loyalty. Historically used in cavalry warfare, the Marwari horse remains a symbol of Rajasthan's heritage and is widely used today in equestrian sports and traditional ceremonies.

12. (1) Both (A) and (R) are true and (R) is the correct explanation of (A).
The cooperative dairy sector in Rajasthan follows a three-tier model designed to maximize efficiency. It consists of Village Dairy Cooperative Societies, District Milk Unions, and the Rajasthan Cooperative Dairy Federation at the apex level. This structured approach ensures that rural milk producers receive fair prices and technical support by directly linking local production to the state-level marketing network.

13. (3) Rearing small flocks for supplementary income and family nutrition
Backyard poultry farming involves keeping small numbers of indigenous birds in rural households. This practice provides families with a steady source of protein through eggs and meat while offering supplementary income from small-scale sales. It requires low capital investment and utilizes household waste as feed, making it an accessible economic activity for marginal farmers and rural women.

14. (4) Chandrabhaga Fair - Known only for trading Bikaneri camels
The Chandrabhaga Fair is held in Jhalrapatan, Jhalawar, and is particularly famous for the trading of Malvi cattle, not just Bikaneri camels. While Pushkar is in Ajmer, Ramdev is in Nagaur, and Mallinath is in Tilwara, the significance of Chandrabhaga lies in its focus on breeds from the Malwa region. Livestock fairs serve as vital cultural and economic hubs.

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15. (4) I, II, III, IV and V
Rajasthan's animal husbandry sector faces challenges like drought and fodder scarcity, yet it is supported by several government initiatives. Free medicine schemes, mobile veterinary units, and insurance programs like Pashu Bima Yojana collectively enhance livestock health and farmer security. These schemes aim to mitigate the genetic limitations caused by environmental stress while providing essential services at the farmer's doorstep.

16. (2) Mass migration of pastoralists with herds to neighboring states
During severe droughts, natural pastures and water sources in western Rajasthan dry up, forcing pastoralists to migrate. This seasonal movement, often toward neighboring states like Madhya Pradesh or Gujarat, is a traditional survival strategy to find grazing land for sheep and cattle. Such migrations are temporary and reflect the livestock owners' adaptation to the extreme arid climate.

17. (2) It is locally called Ajmera or Renda and found in central districts
The Gir cattle breed is natively from Gujarat but is widely reared in central Rajasthan, where it is known as Ajmera or Renda. It is a highly valued milch breed recognized for its high milk yield and physical features like a convex forehead and long ears. This breed thrives in districts such as Ajmer, Bhilwara, and Chittorgarh.

18. (1) A-iii, B-iv, C-i, D-ii
Rajasthan hosts several famous livestock fairs organized at specific locations. The Pushkar Fair is in Ajmer, and the Mallinath Fair takes place at Tilwara in Barmer. The Ramdev Cattle Fair is held in Nagaur, while the Gogamedi Fair occurs in Hanumangarh. These fairs are critical for trading various breeds and maintaining the state's vibrant cultural and livestock traditions.

19. (3) Sahiwal, Red Sindhi, and Tharparkar
The Rathi cattle breed is a cross-bred variety developed from Sahiwal, Red Sindhi, and Tharparkar ancestors. This evolution has resulted

(4) To fulfill mandatory government regulations for inter-state grazing rights
(5) Question not attempted

58. Match the livestock/equine breeds in List I with their primary utility/characteristic in List II.
List I: (Breed)
A. Bikaneri Camel
B. Jaisalmeri Camel
C. Marwari Horse
D. Murrah Buffalo
List II: (Utility/Characteristic)
i. High milk fat percentage
ii. Riding and speed
iii. Heavy draft purposes
iv. Equestrian sports and cavalry
(1) A-iii, B-ii, C-iv, D-i
(2) A-ii, B-iii, C-i, D-iv
(3) A-iv, B-i, C-ii, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

59. The wool of which prominent sheep breed of Rajasthan is extensively utilized worldwide for the manufacturing of high-quality carpets and rugs?
(1) Chokla
(2) Nilgiri
(3) Gaddi
(4) Marwari
(5) Question not attempted

60. Identify the odd one out among the following livestock breeds based on their species category.
(1) Murrah
(2) Gir
(3) Surti
(4) Bhadawari
(5) Question not attempted

61. Identify the incorrect statement regarding the SARAS dairy network in Rajasthan.
(1) SARAS is the leading state-owned cooperative dairy brand in Rajasthan
(2) It procures milk directly from village-level cooperative societies
(3) A private multinational focused on foreign shareholder profits
(4) It ensures transparent weighing and fat testing systems for milk producers
(5) Question not attempted

62. Select the correct geographic sequence of the following major livestock fairs of Rajasthan from West to East.
(1) Pushkar Fair, Nagaur Fair, Tilwara Fair
(2) Tilwara Fair, Nagaur Fair, Pushkar Fair
(3) Nagaur Fair, Tilwara Fair, Pushkar Fair
(4) Tilwara Fair, Pushkar Fair, Nagaur Fair
(5) Question not attempted

63. What is the name of the flagship scheme launched by the Government of Rajasthan to provide essential medicines free of cost for treating domestic animals?
(1) Mukhyamantri Pashudhan Nischulk Dawa Yojana
(2) Pradhan Mantri Fasal Bima Yojana
(3) Rajasthan Gramin Livelihood Project
(4) Rashtriya Gokul Mission
(5) Question not attempted

64. Read the following statements regarding grazing and fodder challenges:
Statement I: Continuous overgrazing by large livestock populations contributes significantly to soil erosion and desertification in western Rajasthan.
Statement II: Implementing rotational grazing practices can entirely eliminate the need for any supplementary stall feeding.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

65. Consider the following statements highlighting the importance of livestock in Rajasthan:
I. Animal husbandry accounts for a substantial portion of the state's agricultural GDP.
II. Livestock provides continuous employment to small and marginal farmers, especially women.
III. Establishing a traditional livestock unit requires higher capital investment than setting up large-scale industrial farming.
Which of the above statement(s) is/are incorrect?

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diversity of animal resources managed by the state's rural population.

29. (3) Frequent occurrence of severe waterlogging in the Thar desert
Animal husbandry in Rajasthan is primarily hindered by grazing land degradation, frequent droughts, and fodder shortages. However, waterlogging is not a characteristic challenge in the arid Thar desert, where the lack of water is the actual problem. Most constraints are related to the extreme dry climate and the limited availability of natural resources needed to sustain large livestock populations year-round.

30. (2) III only
Livestock rearing is a major contributor to Rajasthan's economy and supports soil fertility through organic manure. It also provides essential draft power for farming activities. Statement III is incorrect because livestock rearing is a primary source of employment and income for marginal farmers, rather than causing unemployment. It acts as a financial safety net for the rural poor during agricultural crises.

31. (1) It is a dual-purpose breed utilized for both milk and draft work
The Haryanvi cattle breed is categorized as dual-purpose, meaning it is valued for both its milk production and its draft capabilities. These animals are hardy and have a strong build, making them useful for agricultural operations in the semi-arid regions of northern and eastern Rajasthan. This versatility makes them a preferred choice for farmers who require both dairy and labor.

32. (1) Both (A) and (R) are true and (R) is the correct explanation of (A).
The camel population in Rajasthan has declined significantly as modern transport and mechanized tractors have replaced camels in traditional roles. Since their utility in agriculture and carrying goods has diminished, many owners find it difficult to sustain them economically. This shift in rural infrastructure and technology is the primary driver behind the dwindling numbers of this iconic desert animal.

33. (2) Goat
The goat is widely known as the poor man's cow in Rajasthan due to its low maintenance cost and high utility. It provides milk, meat, and skins, and can survive on sparse vegetation where cattle might perish. For rural households with limited resources, goats provide a reliable source of daily nutrition and liquid assets that can be easily sold.

34. (1) It is resistant to diseases and survives climatic stress and drought
The Marwari sheep is the most populous breed in Rajasthan because of its exceptional hardiness and ability to thrive in extreme temperatures. It possesses high resistance to local diseases and can migrate long distances during fodder scarcities. While its wool is coarse and suited for carpets, its survival traits make it the most practical choice for many desert-dwelling pastoralists.

35. (4) I, II, III, IV and V
Rajasthan is a powerhouse in the sheep and wool sector, producing over thirty percent of India's wool. The state houses Asia's largest wool market in Bikaner and the Central Wool Development Board in Jodhpur. Breeds like Chokla provide fine wool, while Marwari wool is perfect for carpets, reflecting the comprehensive nature of the state's wool industry and its national importance.

36. (4) Surti - Dungarpur and Banswara
The Surti buffalo breed is primarily concentrated in the southern districts of Rajasthan, such as Dungarpur and Banswara, which offer a more humid climate and better water availability. This breed is known for its moderate size and efficient milk production. Other breeds like Murrah are found in the north and east, where agricultural intensity and fodder availability are higher than in the west.

37. (3) Cavalry warfare and equestrian sports
The Marwari horse is historically legendary for its role in cavalry warfare, serving the warrior clans of Rajasthan with bravery and endurance. Today, its unique beauty and spirited nature make it highly sought after for equestrian sports, ceremonies, and heritage tourism. It is not used for heavy agricultural labor or milk production, as its value lies in its agility and status.

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24. Which districts in Rajasthan are the primary beneficiaries of the Bhakra Canal system?
(1) Hanumangarh and Churu
(2) Jaipur and Alwar
(3) Jodhpur and Pali
(4) Kota and Bundi
(5) Question not attempted

25. Consider the following statements concerning the Gang Canal:
I. It was inaugurated by Lord Irwin.
II. It draws its water from the Yamuna river near Delhi.
III. It features several main branches such as Laxminarayanji, Lalgarh, Karni, and Sameja.
Which of the above statement(s) is/are correct?
(1) I and II
(2) I and III
(3) II and III
(4) I, II and III
(5) Question not attempted

26. What is the approximate percentage share of Rajasthan in the Bhakra Nangal joint venture project?
(1) 10.50 percent
(2) 15.22 percent
(3) 25.50 percent
(4) 45.00 percent
(5) Question not attempted

27. Which of the following statements regarding the Chambal Valley Project is incorrect?
(1) It is a joint venture between Rajasthan and Madhya Pradesh with a 50:50 share.
(2) The infrastructure of the project was successfully completed in three distinct phases.
(3) Four major dams have been constructed as part of this integrated cascade system.
(4) Total irrigation potential serves only the state of Rajasthan.
(5) Question not attempted

28. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R). Examine the statements and select the correct answer from the options:
Assertion (A): The Chambal Valley Project has significantly enhanced agricultural productivity in the south-eastern districts of Rajasthan.
Reason (R): Kota Barrage is the only dam in the Chambal series exclusively designed to release water for irrigation purposes rather than for power generation.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

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29. The Right Main Canal originating from the Kota Barrage is designed to provide irrigation to which territories?
(1) Only districts within Rajasthan
(2) Only districts within Madhya Pradesh
(3) Parts of Rajasthan and Madhya Pradesh
(4) Parts of Rajasthan and Gujarat
(5) Question not attempted

30. Consider the following dams constructed as part of the Chambal Valley Project cascade:
I. Gandhi Sagar
II. Rana Pratap Sagar
III. Jawahar Sagar
IV. Kota Barrage
Which of the above dams are geographically situated strictly within the state borders of Rajasthan?
(1) I, II and III
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

31. Which one of the following dams belonging to the Chambal cascade system is located in the Mandsaur district of Madhya Pradesh?
(1) Gandhi Sagar
(2) Jawahar Sagar
(3) Rana Pratap Sagar
(4) Kota Barrage
(5) Question not attempted

32. The Left Main Canal taking off from the Kota Barrage serves the irrigation requirements of which major districts?
(1) Baran and Jhalawar
(2) Kota and Bundi

47. (1) Higher water and fodder needs, more available in eastern regions
Buffaloes are physiologically less tolerant of extreme heat and require much more water and green fodder compared to cattle or goats. Eastern and south-eastern Rajasthan receive more rainfall and have better irrigation facilities, making it easier to sustain these high-yielding animals. Consequently, dairy farming using buffaloes is much more concentrated and successful in these water-abundant regions than in the desert.

48. (1) A-iv, B-i, C-ii, D-iii
Research and administrative institutions are strategically located across Rajasthan. The Central Sheep and Wool Research Institute is in Avikanagar, and the National Research Centre on Camel is in Bikaner. The Rajasthan Cooperative Dairy Federation is headquartered in Jaipur, while the Buffalo Research and Breeding Centre is located in Vallabhnagar, Udaipur. These centers provide specialized scientific support to the state's livestock sector.

49. (2) Direct retail sale of raw milk by farmers at city junctions
The Rajasthan Cooperative Dairy Federation focuses on the organized procurement, processing, and marketing of milk under the SARAS brand. It also provides essential support services like cattle feed and veterinary care to its members. However, encouraging farmers to sell raw milk directly at city junctions is not a core function, as the federation aims for organized, hygienic processing and value addition.

50. (2) I, II and IV only
Poultry farming is vital for income and nutrition, with Ajmer serving as a major production center. Poultry manure is also a valuable organic fertilizer. Statement III is incorrect because improved commercial breeds are specifically bred to yield much higher numbers of eggs compared to traditional desi breeds. Commercial poultry systems maximize production through optimized genetics and controlled environments, unlike the local backyard breeds.

51. (3) It is held on the banks of the Luni river in Barmer and is associated with Mallinath ji
The Tilwara livestock fair is a major event held on the banks of the Luni river in the Barmer district. It is organized in honor of the folk deity Mallinath ji and serves as a massive marketplace for trading Tharparkar cattle, camels, and horses. This fair is one of the oldest in the state and reflects the deep-rooted cultural heritage of western Rajasthan.

52. (1) Both (A) and (R) are true and (R) is the correct explanation of (A).
Mobile Veterinary Units were introduced to overcome the geographical barriers of providing healthcare to animals in remote villages. By bringing veterinary services, including emergency treatment and artificial insemination, directly to the farmer's doorstep, the government aims to improve livestock health and productivity. This initiative is particularly beneficial in vast desert areas where access to permanent veterinary clinics is often limited.

53. (3) Statement I is correct but Statement II is incorrect
Livestock acts as a critical insurance mechanism, providing income when crops fail due to environmental stress. However, Statement II is incorrect because animal husbandry is not completely immune to monsoon failures. Poor rains lead to severe fodder and water shortages, which directly impact livestock health and productivity. Thus, while livestock is more resilient than crops, it still depends on seasonal weather.

54. (2) Nagori
The Nagori cattle breed is famous across northern India for producing exceptionally strong and agile bullocks. These animals are highly prized for their endurance and speed, making them the preferred choice for both ploughing agricultural fields and pulling carts over long distances. Their distinct white color and powerful physical build have made them a staple of Rajasthan's livestock fairs and rural economy.

55. (4) I, II, III, IV and V
The camel holds a unique status in Rajasthan, officially recognized as the state animal in 2014. The Bikaneri breed is known for its cranial 'stop', while Jaisalmeri camels are famous for speed. Research at Bikaner has highlighted the health benefits of camel milk, particularly its insulin-like proteins. All these factors underscore the

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the government and breeders ensure there is continued economic value in raising these horses. This approach helps preserve the breed's genetic heritage while celebrating its historical status as an elite cavalry and ceremonial animal.

74. (1) Rajasthan Cooperative Dairy Federation
RCDF stands for the Rajasthan Cooperative Dairy Federation, which is the apex body for dairy development in the state. It was established to organize milk producers into a structured network, providing them with technical assistance and a reliable market. Through its commercial brand, SARAS, RCDF ensures that processed dairy products reach consumers while returning maximum profits to the rural milk producers.

75. (4) I, II, III, IV and V
Rajasthan is home to numerous iconic livestock fairs that serve as critical economic and cultural hubs. Fairs in Pushkar, Nagaur, and Tilwara are world-renowned for trading camels, Nagori cattle, and other breeds. These events are often named after local deities or folk heroes like Mallinath ji and Ramdev ji, reflecting the deep spiritual and social connections between the people and their animals.

76. (2) Pradhan Mantri Fasal Bima Yojana
Pradhan Mantri Fasal Bima Yojana is a central government scheme designed to provide insurance coverage for agricultural crops against natural calamities. It is not directly related to the livestock or dairy sector. In contrast, schemes like Pashu Bima Yojana and Mukhyamantri Pashudhan Nischulk Dawa Yojana are specifically aimed at supporting animal health and providing insurance for the state's domestic animals.

77. (1) B, D, A, C
Managing fodder scarcity during a drought involves a structured administrative process. It begins with the official assessment and declaration of drought conditions. This is followed by procuring fodder from surplus areas and establishing subsidized fodder banks or depots. Finally, the collected fodder is distributed to the affected farmers to ensure the survival of their livestock during the period of extreme environmental stress.

78. (1) A-i, B-iii, C-ii, D-iv
Institutions in Rajasthan have specialized domains. RCDF manages cooperative dairy and milk processing. CSWRI is dedicated to sheep and wool research, while NRCC focuses on camel breed improvement and health. The State Animal Husbandry Department provides essential veterinary services and manages disease control programs. This division of labor ensures that every livestock species receives scientific and administrative attention for its development.

79. (2) 5 years
The livestock census in India is conducted every five years to accurately track changes in animal populations across different species and breeds. This periodic data collection is essential for the state and central governments to formulate effective policies for animal husbandry and veterinary services. The census provides insights into the economic health of the rural sector and helps in planning resource allocation.

80. (2) Native to the western districts of Jaisalmer and Barmer
The Gir cattle breed is natively from the Gir forest of Gujarat and is predominantly found in the central districts of Rajasthan like Ajmer and Bhilwara. It is not native to the western desert districts of Jaisalmer and Barmer, which are the tracts for breeds like Tharparkar. Gir cattle are distinguished by their high milk yield and unique physical features like convex foreheads.

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stall feeding, especially during drought years. Most farmers must still provide additional fodder to maintain the health and productivity of their animals.

65. (2) III only
Livestock rearing is a major economic driver in Rajasthan, contributing significantly to the agricultural GDP and providing continuous employment. Statement III is incorrect because traditional livestock units generally require much lower capital investment compared to large-scale industrial farming operations. This low entry cost makes it a viable and accessible economic activity for small-scale farmers and landless laborers across the rural landscape.

66. (1) Selective breeding with Sindhi and Sahiwal in Bikaner region
The Rathi breed's unique combination of high milk yield and extreme hardiness is the result of centuries of selective breeding in the Bikaner region. It evolved through the natural and human-led mixing of Sahiwal, Red Sindhi, and Tharparkar cattle strains. This genetic heritage has created a breed that is perfectly adapted to the hot, arid environment while remaining highly productive for dairy farmers.

67. (3) It originated from the cross of Sindhi and Baluchi camel strains
The Bikaneri camel was developed by crossing the Sindhi and Baluchi camel strains, resulting in an animal that is exceptionally strong and suited for heavy labor. This breed is characterized by its heavy build and a unique physical feature known as the 'stop' or depression on its skull. It is now considered one of the finest draft camel breeds in the world.

68. (1) A-iii, B-i, C-ii, D-iv
Different livestock breeds are known by specialized titles reflecting their utility. The Chokla sheep is called the Indian Merino for its fine wool. The camel is the ship of the desert due to its arid adaptation. The goat is the poor man's cow for its low maintenance. The Murrah buffalo is the high-fat milk producer, illustrating the functional diversity of Rajasthan's animal resources.

69. (3) Exceptionally rapid body weight gain making it ideal for the meat market
Commercial rearers favor the Sirohi goat because of its ability to gain body weight quickly, which is highly profitable for the meat industry. This breed is hardy and thrives in semi-arid conditions, often being raised in stall-fed systems. Its rapid growth makes it an efficient converter of fodder into meat, providing farmers with a faster return on investment compared to other local breeds.

70. (4) I, II, III and IV
Rajasthan's wool sector is globally significant, with the state consistently ranking first in India. Sheep are typically sheared twice a year, and the Marwari breed remains the most numerous. The Chokla breed is celebrated for producing the finest wool in the region. Collectively, these factors maintain the state's dominance in the wool industry, supporting both domestic manufacturing and international carpet exports.

71. (4) State produces mainly ultra-fine apparel-grade Merino wool
While Rajasthan is India's largest wool producer and Bikaner is a major trading hub, the state does not primarily produce ultra-fine apparel-grade Merino wool. Instead, the majority of Rajasthan's wool is carpet-grade, characterized by its durability and coarseness. This type of wool is perfectly suited for the manufacturing of high-quality rugs and carpets, which is the cornerstone of the state's wool industry.

72. (1) Both (A) and (R) are true and (R) is the correct explanation of (A).
Murrah buffaloes are highly sought after and expensive because they are the most productive indigenous dairy animals in India. They produce high volumes of milk with a superior fat content, making them extremely profitable for commercial dairy farmers. This combination of yield and quality ensures that they command a premium price in livestock markets throughout Rajasthan and across other northern states.

73. (3) Promoting the breed in endurance riding, equestrian sports, and heritage tourism
Modern conservation strategies for the Marwari horse focus on maintaining its utility in the modern era. By promoting the breed in equestrian sports, endurance riding, and cultural tourism,

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animal's ecological, scientific, and cultural value to the state.

56. (1) Sirohi - Reared for meat; known for rapid body weight gain
The Sirohi goat is highly valued by commercial rearers because of its exceptional growth rate and meat quality. This breed is well-adapted to the local climate and thrives even in stall-fed conditions, which is essential for modern meat production businesses. While it also provides milk, its primary economic significance lies in its ability to gain weight quickly for the meat market.

57. (3) Search for grazing and water as local vegetation dries up
The seasonal migration of sheep in Rajasthan is a direct response to the depletion of local grazing resources during the harsh summer months. As natural pastures in the desert dry up and water becomes scarce, shepherds move their flocks toward greener areas in neighboring states. This long-standing nomadic practice is essential for keeping the large livestock population alive during the dry season.

58. (1) A-iii, B-ii, C-iv, D-i
Livestock breeds in Rajasthan are specialized for various purposes. Bikaneri camels are primarily utilized for heavy draft work, while Jaisalmeri camels are preferred for riding and speed. Marwari horses are renowned for equestrian sports and historical cavalry roles. Murrah buffaloes are the premier choice for dairy production because of their exceptionally high milk yield and superior milk fat percentage.

59. (4) Marwari
The Marwari sheep breed produces wool that is relatively coarse but highly durable, making it the preferred material for manufacturing high-quality carpets and rugs globally. Rajasthan's wool industry relies heavily on this breed to supply the international carpet market. While other breeds like Chokla provide finer wool for clothing, the Marwari breed's fleece is essential for the state's robust textile exports.

60. (2) Gir
Murrah, Surti, and Bhadawari are all prominent breeds belonging to the buffalo species, known for their milk production and regional adaptations. Gir, however, is a famous cattle breed native to the Gir forest region and central Rajasthan. Therefore, based on the species category, Gir is the odd one out among these options. Identifying species-specific breeds is crucial for livestock management and study.

61. (3) A private multinational focused on foreign shareholder profits
SARAS is a cooperative dairy brand owned by the Rajasthan Cooperative Dairy Federation, which is a state-level organization. It operates on a profit-sharing model for the benefit of local milk producers rather than being a private multinational. The network ensures transparency in milk procurement and focuses on rural development, providing a stable market and fair prices for thousands of village-level dairy farmers.

62. (2) Tilwara Fair, Nagaur Fair, Pushkar Fair
Geographically, these livestock fairs are located from west to east. The Tilwara Fair is in Barmer, the westernmost part of the state. Moving eastward, the Nagaur Fair is held in the central district of Nagaur. Further east, the Pushkar Fair is organized in the Ajmer district. This sequence reflects the movement from the deep desert regions toward the central plains of Rajasthan.

63. (1) Mukhyamantri Pashudhan Nischulk Dawa Yojana
The Mukhyamantri Pashudhan Nischulk Dawa Yojana is the flagship state government initiative designed to provide essential veterinary medicines and vaccines free of charge. This scheme is intended to reduce the financial burden on farmers and improve the overall health of the state's livestock population. By ensuring the availability of quality medicines at veterinary hospitals, the government supports the crucial animal husbandry sector.

64. (3) Statement I is correct but Statement II is incorrect
Overgrazing by large livestock populations in western Rajasthan is a major driver of soil erosion and desertification, as it destroys the fragile vegetative cover. However, Statement II is incorrect because rotational grazing alone cannot completely replace the need for supplementary

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CHAPTER 24
Irrigation in Rajasthan

1. What is the primary reason for the high dependency on artificial irrigation systems in Rajasthan?
(1) Abundance of perennial rivers across the state
(2) Low and highly erratic rainfall patterns
(3) The state government's policy to promote cash crops globally
(4) High soil moisture retention capacity in western districts
(5) Question not attempted

2. Which source contributes the highest percentage to the total irrigated area in Rajasthan?
(1) Wells and tubewells
(2) Canal irrigation
(3) Tank irrigation
(4) Traditional step-wells
(5) Question not attempted

3. Match List I with List II and select the correct answer using the codes given below:
List I: (Irrigation Source)
A. Tube wells
B. Canal irrigation
C. Tank irrigation
D. Khadin
List II: (Predominant Region/District)
i. Jaisalmer
ii. Jaipur and Alwar
iii. Ganganagar and Hanumangarh
iv. Bhilwara
(1) A-ii, B-iii, C-iv, D-i
(2) A-iii, B-ii, C-i, D-iv
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

4. Which of the following statements regarding canal irrigation in Rajasthan is incorrect?
(1) It is the second largest source of irrigation in the state.
(2) It is predominantly concentrated in the western and northern districts.
(3) The Indira Gandhi Canal is the most significant contributor to this system.
(4) It relies exclusively on the monsoon-fed rivers originating within the state.
(5) Question not attempted

5. Consider the following statements regarding the Indira Gandhi Canal:
I. Its origin is from the Harike Barrage situated at the confluence of the Satluj and Beas rivers.
II. It was originally known as the Rajasthan Canal until its name was changed in 1984.
III. The project has led to a major agricultural green revolution in the Thar Desert.
Which of the above statement(s) is/are correct?
(1) I and II
(2) II and III
(3) I and III
(4) I, II and III
(5) Question not attempted

6. The total length of the Indira Gandhi Feeder Canal, from its origin to its entry into Rajasthan at Masitawali Head, is approximately:
(1) 445 km
(2) 204 km
(3) 649 km
(4) 189 km
(5) Question not attempted

7. What was the primary objective behind constructing the lift canals along the Indira Gandhi Canal system?
(1) To transfer excess floodwater to the drought-prone neighboring states
(2) To provide gravity flow irrigation to the low-lying western regions
(3) To generate hydroelectric power for the local rural electrification
(4) To supply water to the higher elevated eastern areas

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38. (1) A-iii, B-iv, C-i, D-ii
The Rajasthan dairy cooperative structure operates through multiple levels. The Rajasthan Cooperative Dairy Federation is the apex body, while District Milk Unions manage operations at the regional level. At the grassroots, Village Milk Producer Cooperative Societies collect milk directly from farmers. SARAS is the commercial brand used to sell the processed products, completing the link from producer to consumer.

39. (3) Kartik
The world-famous Pushkar livestock fair is held during the Hindu lunar month of Kartik, typically falling in October or November. This fair coincides with a sacred pilgrimage, attracting thousands of traders and tourists. While it is a significant religious event, the fair is equally important for the massive scale of camel and horse trading that takes place on the sandy dunes of Ajmer.

40. (3) Statement I is correct but Statement II is incorrect
The Mukhyamantri Pashudhan Nischulk Dawa Yojana is a state government flagship scheme that provides essential veterinary medicines free of charge to livestock owners. This initiative aims to reduce the economic burden on farmers and improve animal health. However, the scheme is funded by the state government rather than the World Bank, making Statement II factually incorrect in its funding source.

41. (3) Erratic rainfall patterns leading to poor growth of natural pastures and grasses
Western Rajasthan suffers from persistent fodder scarcity primarily due to erratic and low rainfall, which prevents the consistent growth of natural grasses and pastures. This environmental constraint limits the carrying capacity of the land for livestock. While irrigation has expanded in some areas, the vast majority of the region remains dependent on unpredictable rains for the survival of grazing vegetation.

42. (1) A, B, C
Geographically, the Rathi breed is native to the northernmost districts like Bikaner and Ganganagar. Moving south, the Nagori breed is predominantly found in the central district of Nagaur. Further south, the Gir cattle, also known as Ajmera, are concentrated in the Ajmer and Bhilwara regions. This north-to-south distribution reflects the climatic and regional adaptations of these specific indigenous cattle breeds.

43. (4) Surti
Bikaneri, Jaisalmeri, and Balotra are recognized as regional breeds or varieties of camels in Rajasthan. In contrast, Surti is the name of a breed associated with buffaloes and goats, not camels. Therefore, Surti is the odd one out in this group of species-specific categories. Understanding breed names is essential for identifying the diverse livestock populations found across the state's various districts.

44. (2) The Sirohi breed is primarily reared for producing fine pashmina wool
Goats are highly adapted to the harsh Rajasthan climate, providing liquidity and nutrition to rural families. However, Statement II is incorrect because the Sirohi breed is reared for meat and milk, not pashmina. Pashmina is a fine wool produced by specific goat breeds in the high-altitude Himalayan regions of Kashmir and Ladakh, rather than the semi-arid plains of Rajasthan.

45. (2) II and III only
While Chokla is indeed found in Shekhawati, the Marwari sheep is known for carpet-grade wool, not fine apparel wool. Additionally, sheep population density is highest in the arid and semi-arid western districts where they can graze on natural pastures, rather than the humid eastern regions. These western areas offer the extensive land required for the traditional migratory lifestyle of Rajasthan's sheep flocks.

46. (4) Bikaner
Bikaner is officially recognized as home to Asia's largest wool market or mandi. This city serves as the central hub for the collection, grading, and trading of wool produced across the state. The presence of this market, along with numerous wool processing units, reinforces Bikaner's historical and economic significance in the national wool industry, supported by the surrounding sheep-rearing heartland.

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(5) Question not attempted

15. Consider the following districts of Rajasthan:
I. Bikaner
II. Jaisalmer
III. Churu
IV. Hanumangarh
V. Udaipur
Which of the above districts benefit directly from the Indira Gandhi Canal Project network?
(1) I, II, III and IV
(2) I, III, IV and V
(3) II, III, IV and V
(4) I, II, IV and V
(5) Question not attempted

16. Which of the following is considered the longest lift canal of the Indira Gandhi Canal Project?
(1) Chaudhary Kumbharam Lift Canal
(2) Kanwar Sen Lift Canal
(3) Dr. Karni Singh Lift Canal
(4) Jai Narayan Vyas Lift Canal
(5) Question not attempted

17. The last operational point of the Indira Gandhi Canal is situated at:
(1) Mohangarh
(2) Gadra Road
(3) Nachna
(4) Ramgarh
(5) Question not attempted

18. Select the correct sequence of the Indira Gandhi Canal lift canals geographically from North to South:
(1) Chaudhary Kumbharam - Kanwar Sen - Panna Lal Barupal - Dr. Karni Singh
(2) Kanwar Sen - Chaudhary Kumbharam - Dr. Karni Singh - Panna Lal Barupal
(3) Panna Lal Barupal - Dr. Karni Singh - Chaudhary Kumbharam - Kanwar Sen
(4) Chaudhary Kumbharam - Panna Lal Barupal - Kanwar Sen - Dr. Karni Singh
(5) Question not attempted

19. Which of the following is recognized as the oldest modern canal system in Rajasthan?
(1) Indira Gandhi Canal
(2) Bhakra Canal
(3) Gang Canal
(4) Narmada Canal
(5) Question not attempted

20. The construction of the Gang Canal was completed under the visionary leadership of Maharaja Ganga Singh in the year:
(1) 1914
(2) 1927
(3) 1935
(4) 1948
(5) Question not attempted

21. From which location does the Gang Canal originate before bringing water to the Sri Ganganagar district?
(1) Harike Barrage on the Satluj river
(2) Nangal Dam on the Satluj river
(3) Husainiwala on the Satluj river
(4) Okhla on the Yamuna river
(5) Question not attempted

22. What was the most significant socio-economic effect of the Gang Canal on the Bikaner princely state?
(1) It led to the mass migration of farmers to Punjab.
(2) It transformed the dry, arid region into a major grain-producing hub.
(3) It triggered extreme waterlogging issues rendering land infertile immediately.
(4) It shifted the local economy purely towards industrial manufacturing.
(5) Question not attempted

23. Match List I with List II and select the correct answer using the codes given below:
List I: (Irrigation Project)
A. Bhakra Nangal Project
B. Chambal Valley Project
C. Mahi Bajaj Sagar Project
D. Narmada Canal Project
List II: (Sponsoring/Beneficiary States)
i. Rajasthan and Madhya Pradesh
ii. Rajasthan, Punjab and Haryana
iii. Rajasthan, Gujarat, Maharashtra and Madhya Pradesh
iv. Rajasthan and Gujarat
(1) A-ii, B-i, C-iv, D-iii
(2) A-iii, B-i, C-iv, D-ii
(3) A-ii, B-iv, C-i, D-iii
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

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(5) Question not attempted

8. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R). Examine the statements and select the correct answer from the options:
Assertion (A): The Indira Gandhi Canal has transformed the desert ecology of western Rajasthan and ushered in an agricultural green revolution.
Reason (R): The introduction of intensive canal irrigation in the desert has completely eliminated the threat of soil salinity and waterlogging.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. Identify the odd one out among the following lift canals based on their association with the Indira Gandhi Canal Project:
(1) Kanwar Sen Lift Canal
(2) Panna Lal Barupal Lift Canal
(3) Bhikhabhai Sagwara Canal
(4) Guru Jambheshwar Lift Canal
(5) Question not attempted

10. Consider the following statements regarding the phases and features of the Indira Gandhi Canal Project:
I. Phase I of the project primarily covered Ganganagar, Hanumangarh, and parts of Bikaner districts.
II. Phase II of the project was designed to extend irrigation up to the Jaisalmer and Barmer districts.
III. The main canal provides gravity flow irrigation exclusively to the left side of the canal.
IV. The terminal point of the canal system was extended to Gadra Road in Barmer.
Which of the above statement(s) is/are correct?
(1) I, II and IV
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

11. Read Statement I and Statement II carefully and choose the correct option:
Statement I: All the branches of the Indira Gandhi Canal take off from the right bank, with the exception of the Rawatsar branch.
Statement II: The general slope of the land in the command area is towards the left bank, making right bank branches difficult to construct.
(1) Both statements are correct, and Statement II explains Statement I.
(2) Both statements are correct, but Statement II does not explain Statement I.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

12. Which river system provides the continuous water supply required for the Indira Gandhi Canal?
(1) Yamuna and Chambal
(2) Satluj and Beas
(3) Ravi and Chenab
(4) Luni and Sukri
(5) Question not attempted

13. Match List I with List II and select the correct answer using the codes given below:
List I: (Old Name of IGNP Lift Canal)
A. Bikaner-Lunkaransar Lift Canal
B. Gajner Lift Canal
C. Kolayat Lift Canal
D. Phalodi Lift Canal
List II: (New Name)
i. Dr. Karni Singh Lift Canal
ii. Panna Lal Barupal Lift Canal
iii. Kanwar Sen Lift Canal
iv. Guru Jambheshwar Lift Canal
(1) A-ii, B-iii, C-iv, D-i
(2) A-iii, B-ii, C-i, D-iv
(3) A-iv, B-i, C-ii, D-iii
(4) A-iii, B-iv, C-ii, D-i
(5) Question not attempted

14. Which district serves as the entry point for the Indira Gandhi Main Canal into Rajasthan?
(1) Sri Ganganagar
(2) Bikaner
(3) Jaisalmer
(4) Hanumangarh

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(3) Sawai Madhopur and Tonk
(4) Chittorgarh and Bhilwara
(5) Question not attempted

33. Match List I with List II and select the correct answer using the codes given below:
List I: (Dam)
A. Jawai Dam
B. Bisalpur Dam
C. Mahi Bajaj Sagar Dam
D. Rana Pratap Sagar Dam
List II: (District/Location)
i. Tonk
ii. Chittorgarh
iii. Pali
iv. Banswara
(1) A-iii, B-i, C-iv, D-ii
(2) A-iii, B-ii, C-iv, D-i
(3) A-i, B-iii, C-ii, D-iv
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

34. Identify the odd one out among the following reservoirs in Rajasthan based on their respective river basins:
(1) Jawai Dam
(2) Bisalpur Dam
(3) Meja Dam
(4) Isarda Dam
(5) Question not attempted

35. Consider the following districts:
I. Kota
II. Bundi
III. Baran
IV. Jhalawar
V. Bikaner
Which of the above districts constitute the principal command area for the Chambal Canal irrigation system in Rajasthan?
(1) I, II, III and IV
(2) I, II, IV and V
(3) I, II and III
(4) II, III, IV and V
(5) Question not attempted

36. Which project is primarily dedicated to bringing water to the tribal-dominated regions of southern Rajasthan?
(1) Narmada Canal Project
(2) Chambal Valley Project
(3) Eastern Rajasthan Canal Project
(4) Mahi Bajaj Sagar Project
(5) Question not attempted

37. What is the proportion of financial and water sharing between Rajasthan and Gujarat respectively in the Mahi Bajaj Sagar Project?
(1) 45:55
(2) 50:50
(3) 55:45
(4) 40:60
(5) Question not attempted

38. Select the correct sequence of the major dams constructed on the Chambal River from downstream (North) to upstream (South):
(1) Kota Barrage - Jawahar Sagar - Rana Pratap Sagar - Gandhi Sagar
(2) Gandhi Sagar - Rana Pratap Sagar - Jawahar Sagar - Kota Barrage
(3) Kota Barrage - Rana Pratap Sagar - Jawahar Sagar - Gandhi Sagar
(4) Rana Pratap Sagar - Gandhi Sagar - Kota Barrage - Jawahar Sagar
(5) Question not attempted

39. The Mahi Bajaj Sagar dam is physically located in which of the following districts?
(1) Dungarpur
(2) Pratapgarh
(3) Udaipur
(4) Banswara
(5) Question not attempted

40. According to the bilateral agreement for the Mahi Bajaj Sagar Project, how is the generated hydroelectricity distributed?
(1) Entire 100 percent is allocated to Rajasthan
(2) Shared equally between Rajasthan and Gujarat
(3) 55 percent to Gujarat and 45 percent to Rajasthan
(4) Entire 100 percent is allocated to Gujarat
(5) Question not attempted

41. The Bhikhabhai Sagwara Canal was constructed to utilise the waters of which major project?
(1) Narmada Project
(2) Chambal Project
(3) Mahi Bajaj Sagar Project
(4) Bhakra Nangal Project

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ANSWERS

1. (2) Low and highly erratic rainfall patterns
Rajasthan faces extreme water scarcity due to its geographical location. The Thar Desert covers a large part of the state, resulting in meager precipitation and high evaporation rates. Consequently, natural water sources are insufficient for agriculture, making artificial irrigation systems essential to sustain crop production and meet the food requirements of the growing population in this arid region.

2. (1) Wells and tubewells
Wells and tubewells serve as the primary source of irrigation in Rajasthan, covering over two-thirds of the total irrigated area. This dominance is particularly evident in the eastern and northeastern plains where groundwater is more accessible compared to the arid west. This method provides farmers with independent and reliable water access throughout the year, supporting diverse agricultural cycles.

3. (1) A-ii, B-iii, C-iv, D-i
Tube wells are prevalent in Jaipur and Alwar due to favorable groundwater conditions. Canal irrigation is the lifeline for northern districts like Ganganagar and Hanumangarh. Tank irrigation is traditionally significant in Bhilwara's hilly terrain. Khadin, a unique runoff farming system, is a centuries-old rainwater harvesting technique practiced primarily by farmers in the Jaisalmer region to sustain desert agriculture.

4. (4) It relies exclusively on the monsoon-fed rivers originating within the state.
Canal irrigation in Rajasthan primarily utilizes water from perennial Himalayan rivers through inter-state agreements. Unlike smaller local projects, these major canals do not rely on the ephemeral rivers originating within the state's borders. The system is strategically designed to transport water from surplus basins in the north to the water-deficient regions of the western Thar Desert for farming.

5. (4) I, II and III
The Indira Gandhi Canal Project is a multi-state venture originating from the Harike Barrage. Renamed in 1984, it transformed the arid landscape of the Thar Desert into productive agricultural land. By providing a perennial water supply, it facilitated a green revolution, enabling the cultivation of diverse crops and significantly improving the socio-economic conditions and food security of the region.

6. (2) 204 km
The Indira Gandhi Feeder Canal is the initial segment of the massive irrigation project, designed specifically to transport water without allowing any intermediate withdrawals. It starts at the Harike Barrage in Punjab and travels approximately 204 kilometers before entering Rajasthan at Masitawali Head. This feeder ensures the efficient and rapid delivery of water to the main canal distribution system.

7. (4) To supply water to the higher elevated eastern areas
The topography of western Rajasthan involves varying elevations, where some regions are higher than the main canal level. Lift canals utilize powerful pumping stations to raise water to these elevated eastern areas. This mechanical lifting allows the benefits of the Indira Gandhi Canal to reach territories that cannot be irrigated through simple gravity-based flow systems, ensuring wider water distribution.

8. (3) A is true but R is false.
While the Indira Gandhi Canal has revolutionized desert agriculture and ecology, it has also introduced significant environmental challenges. Intensive irrigation in regions with poor natural drainage has led to rising water tables. This phenomenon causes widespread waterlogging and soil salinity, often referred to as the 'Sem' problem, rather than eliminating it, which can eventually render agricultural land completely unproductive.

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grown in the Thar
(5) Question not attempted

50. Consider the following statements regarding the Bisalpur Dam:
I. It is constructed across the Banas river in Tonk district.
II. It is the largest concrete gravity dam in Rajasthan.
III. It serves as a major source of drinking water for the capital city, Jaipur.
IV. It provides vital irrigation strictly to the Ganganagar and Hanumangarh districts.
Which of the above statement(s) is/are correct?
(1) I, II and III
(2) II, III and IV
(3) I, III and IV
(4) I, II, III and IV
(5) Question not attempted

51. The highest percentage of irrigation through traditional tanks in Rajasthan is recorded in which of the following districts?
(1) Jaisalmer
(2) Sri Ganganagar
(3) Bhilwara
(4) Bikaner
(5) Question not attempted

52. Which of the following is not a primary beneficiary district of the drinking water supplied by the Bisalpur Project?
(1) Jaipur
(2) Ajmer
(3) Tonk
(4) Jaisalmer
(5) Question not attempted

53. Match List I with List II and select the correct answer using the codes given below:
List I: (Canal/Project)
A. Gang Canal
B. Indira Gandhi Main Canal
C. Narmada Canal
D. Gurgaon Canal
List II: (Source River)
i. Yamuna
ii. Satluj
iii. Confluence of Satluj and Beas
iv. Narmada
(1) A-ii, B-iii, C-iv, D-i
(2) A-iii, B-ii, C-iv, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

54. What factor primarily limits the widespread use of well irrigation in the southern parts of Rajasthan?
(1) Excessive salinity of surface waters
(2) Deep aquifers obstructed by hard rock topography
(3) Frequent overflow of perennial rivers
(4) Strict government bans on agriculture in tribal zones
(5) Question not attempted

55. Consider the following environmental and agricultural challenges:
I. Waterlogging (Sem)
II. Soil Salinity
III. Alkalinity
IV. Over-depletion of deep aquifers
V. Deposition of wind-blown sand
Which of the above represent the major ecological issues associated with the expansion of canal irrigation in western Rajasthan?
(1) I, II and III
(2) I, III and V
(3) II, IV and V
(4) III, IV and V
(5) Question not attempted

56. What mineral is traditionally applied by farmers in Rajasthan to reclaim soils affected by severe alkalinity and waterlogging?
(1) Gypsum
(2) Bauxite
(3) Mica
(4) Copper sulfate
(5) Question not attempted

57. Read the given statements carefully and choose the correct option:
Statement I: The problem of soil salinity in the IGNP command area is partly due to capillary action.
Statement II: A hardpan of gypsum below the soil surface restricts the downward percolation of excess canal water.
(1) Both statements are correct, and Statement II explains Statement I.

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(2) Both statements are correct, but Statement II does not explain Statement I.
(3) Statement I is correct, but Statement II is incorrect.
(4) Statement I is incorrect, but Statement II is correct.
(5) Question not attempted

58. The following are major sources of irrigation in Rajasthan:
A. Canals
B. Tanks
C. Wells and Tubewells
D. Other traditional sources
Arrange them in descending order based on their contribution to the total net irrigated area in Rajasthan.
(1) C, A, B, D
(2) A, C, B, D
(3) C, B, A, D
(4) A, B, C, D
(5) Question not attempted

59. What was the core focus of the Indo-Dutch collaborative project known as RAJAD, implemented in Rajasthan?
(1) Eradicating the frequent locust invasions that plague the agriculture of western districts
(2) Introducing and managing exotic dairy cattle breeds to boost rural livelihood
(3) Building and maintaining solar-powered desalination plants for clean drinking water
(4) Implementing sub-surface drainage to mitigate waterlogging in the Chambal area
(5) Question not attempted

60. Which regions in Rajasthan are frequently classified as 'Dark Zones' by the groundwater authorities?
(1) Areas where solar power is entirely unavailable due to geographical barriers
(2) Blocks where groundwater extraction significantly exceeds the natural recharge
(3) Regions characterized by the absence of monsoon rainfall for five continuous years
(4) Dense forest reserves where agricultural activities are legally barred by the state
(5) Question not attempted

61. The first tubewell in the state of Rajasthan, pioneering a new era of groundwater extraction, was established in 1930 at:
(1) Dholpur
(2) Alwar
(3) Bharatpur
(4) Jaipur
(5) Question not attempted

62. Which plantation tree is widely recommended and utilized in the IGNP command areas for 'biological drainage' to counter waterlogging?
(1) Khejri (Prosopis cineraria)
(2) Rohida (Tecomella undulata)
(3) Babool (Acacia nilotica)
(4) Safeda (Eucalyptus)
(5) Question not attempted

63. Match List I with List II and select the correct answer using the codes given below:
List I: (Term)
A. Sem
B. Command Area
C. Dark Zone
D. Biological Drainage
List II: (Description)
i. Groundwater over-exploited region
ii. Planting Eucalyptus trees
iii. Waterlogging due to capillary action and seepage
iv. Geographic region capable of being irrigated by a specific canal system
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-i, B-ii, C-iii, D-iv
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

64. Which of the following canal projects was the pioneer in India to mandate a 100 percent sprinkler irrigation system in its command area?
(1) Indira Gandhi Canal
(2) Narmada Canal Project
(3) Chambal Valley Project
(4) Gang Canal
(5) Question not attempted

65. Consider the following statements about micro-irrigation in Rajasthan:
I. The Narmada Canal Project enforces mandatory sprinkler irrigation to maximize

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water efficiency.
II. Drip irrigation significantly reduces water loss by minimizing both surface evaporation and deep percolation.
III. These advanced micro-irrigation methods are deemed completely useless in the arid climate of western Rajasthan.
Which of the above statement(s) is/are correct?
(1) I and II
(2) II and III
(3) I and III
(4) I, II and III
(5) Question not attempted

66. Drip irrigation systems are considered most economically viable and agronomically suitable for which type of cultivation in Rajasthan?
(1) Horticulture and fruit orchards
(2) Widespread wheat farming
(3) Paddy (rice) cultivation in floodplains
(4) Traditional pearl millet (Bajra) rainfed farming
(5) Question not attempted

67. The Narmada Canal enters the state of Rajasthan precisely in which district?
(1) Barmer
(2) Sirohi
(3) Jalore
(4) Pali
(5) Question not attempted

68. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R). Examine the statements and select the correct answer from the options:
Assertion (A): The promotion of drip and sprinkler irrigation is highly crucial for the sustainable agricultural future of Rajasthan.
Reason (R): Rajasthan possesses roughly 10 percent of India's landmass but only about 1 percent of the country's surface water resources.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

69. Which pair of districts benefits directly from the irrigation waters of the Narmada Canal Project in Rajasthan?
(1) Sirohi and Pali
(2) Banswara and Dungarpur
(3) Jalore and Barmer
(4) Jaisalmer and Bikaner
(5) Question not attempted

70. Consider the following modern projects and initiatives aimed at mitigating irrigation issues in Rajasthan:
I. RAJAD (Rajasthan Agricultural Drainage Research Project)
II. Mukhya Mantri Jal Swavlamban Abhiyan
III. Command Area Development Programme (CAD)
IV. Sardar Sarovar micro-irrigation mandates
Which of the above represent initiatives directly aimed at improving water use efficiency or solving waterlogging/drainage problems?
(1) I, III and IV
(2) II, III and IV
(3) I, II and III
(4) I, II, III and IV
(5) Question not attempted

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71. The Rajiv Gandhi Siddhmukh-Nohar Irrigation Project was formulated primarily to utilise the surplus waters of which rivers?
(1) Ganga and Yamuna
(2) Narmada and Tapti
(3) Luni and Sukri
(4) Ravi and Beas
(5) Question not attempted

72. Which two districts are the main beneficiaries of the Rajiv Gandhi Siddhmukh-Nohar Irrigation Project?
(1) Churu and Hanumangarh
(2) Bikaner and Jaisalmer
(3) Sikar and Jhunjhunu
(4) Jodhpur and Nagaur
(5) Question not attempted

73. Match List I with List II and select the correct answer using the codes given below:
List I: (Medium Irrigation Project)
A. Som Kagdar
B. Meja Dam
C. Chhapi Project

begins with the Chaudhary Kumbharam Lift Canal, followed by the Kanwar Sen, Panna Lal Barupal, and Dr. Karni Singh lift canals. This systematic arrangement ensures an organized distribution of water to the elevated lands situated east of the main canal.

19. (3) Gang Canal
The Gang Canal is celebrated as the oldest modern canal irrigation system in Rajasthan. Built in the early 20th century, it served as a precursor to larger subsequent projects like the Indira Gandhi Canal. It demonstrated the feasibility of transforming desert lands through large-scale engineering, setting a historical precedent for water management and agricultural development in the arid princely states.

20. (2) 1927
Maharaja Ganga Singh of Bikaner, often called the "Modern Bhagirath," spearheaded the construction of the Gang Canal. The project was a landmark achievement in irrigation engineering and was officially completed in 1927. Its success brought life-sustaining water to the northern desert, laying the foundation for the region's future prosperity and serving as a model for subsequent large-scale irrigation projects.

21. (3) Husainiwala on the Satluj river
The Gang Canal originates from the Satluj River at Husainiwala, located near Firozpur in Punjab. From this point, it carries water into the Sri Ganganagar district of Rajasthan. This strategic diversion was the first major attempt to bring Himalayan water to the Thar Desert, significantly altering the landscape and agricultural potential of the Bikaner state's northern territories during that era.

22. (2) It transformed the dry, arid region into a major grain-producing hub.
Before the advent of the Gang Canal, the northern part of the Bikaner state was a sparsely populated, arid wasteland. The introduction of canal water transformed this region into a highly productive agricultural zone, now known as the "food basket" of Rajasthan. This socio-economic shift led to increased settlement, improved livelihoods, and the emergence of major grain-producing hubs.

23. (1) A-ii, B-i, C-iv, D-iii
Rajasthan participates in several multi-state projects. Bhakra Nangal involves Punjab and Haryana. The Chambal Valley is a joint venture with Madhya Pradesh. The Mahi Bajaj Sagar project is shared with Gujarat, primarily benefiting southern tribal areas. The Narmada Canal involves Rajasthan, Gujarat, Maharashtra, and Madhya Pradesh, bringing water to the most arid southern districts of the state through sprinklers.

24. (1) Hanumangarh and Churu
The Bhakra Canal system is a major source of irrigation for northern Rajasthan. The primary beneficiary districts are Hanumangarh and Churu. This canal network utilizes water from the Bhakra Dam on the Satluj River. It has played a crucial role in stabilizing agriculture in these regions, which were previously dependent on erratic rainfall and seasonal streams for their agricultural water needs.

25. (2) I and III
The Gang Canal was officially inaugurated by the then Viceroy of India, Lord Irwin, in 1927. It draws water from the Satluj River at Husainiwala. The system includes several key distribution branches such as Laxminarayanji, Lalgarh, Karni, and Sameja. These branches are essential for distributing water across the fertile plains of the present-day Sri Ganganagar district for intensive farming.

26. (2) 15.22 percent
Rajasthan is a significant partner in the Bhakra Nangal joint venture, which was established to share the waters of the Satluj River. The state's allocated share in this massive hydroelectric and irrigation project is approximately 15.22 percent. This share ensures a steady supply of both water and electricity, supporting the agricultural and industrial growth of the state's northern districts.

27. (4) Total irrigation potential serves only the state of Rajasthan.
The Chambal Valley Project is a comprehensive joint venture between Rajasthan and Madhya Pradesh, sharing costs and benefits equally. It consists of four major dams built in three phases. While the project generates immense power and provides irrigation to Rajasthan, the assertion

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(3) Mahi Basin which originates in Madhya Pradesh and flows through Banswara
(4) Sabarmati Basin draining the Aravalli hills before entering the state of Gujarat
(5) Question not attempted

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(5) Question not attempted

42. Which of the following best describes the core utility of the Jawai Dam located in Pali district?
(1) It provides drinking water and irrigation, known as the 'Amrit Sarovar of Marwar'.
(2) It is designed to function exclusively as a hydroelectric project for western districts.
(3) It acts primarily as a flood control barrier for the seasonal Luni river basin.
(4) It is an inland navigation project constructed by the leadership of Maharaja Ganga Singh.
(5) Question not attempted

43. Match List I with List II and select the correct answer using the codes given below:
List I: (Traditional Source of Irrigation)
A. Khadin
B. Johad
C. Tank Irrigation
D. Step-well (Baori)
List II: (Region)
i. Shekhawati region
ii. Bundi and Jodhpur urban heritage
iii. Jaisalmer region
iv. Bhilwara region
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-iii, C-ii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

44. To ensure a continuous supply of water during the dry season, the Jawai Dam is supplemented by water diverted from which project?
(1) Som Kamla Amba Project
(2) Sei Diversion Project
(3) Jakham Dam Project
(4) Orai Irrigation Project
(5) Question not attempted

45. Consider the following statements regarding the Mahi Bajaj Sagar Project:
I. It is situated on the Mahi River in the Banswara district.
II. It provides irrigation primarily to the tribal-dominated belts of southern Rajasthan.
III. It receives significant funding from the central government's Desert Development Programme.
Which of the above statement(s) is/are correct?
(1) I and II
(2) II and III
(3) I and III
(4) I, II and III
(5) Question not attempted

46. Across which river is the Bisalpur Dam primarily constructed?
(1) Luni
(2) Chambal
(3) Sabarmati
(4) Banas
(5) Question not attempted

47. Which of the following major cities rely significantly on the Bisalpur Dam for their daily drinking water supply?
(1) Jaipur and Ajmer
(2) Jodhpur and Bikaner
(3) Udaipur and Chittorgarh
(4) Kota and Baran
(5) Question not attempted

48. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R). Examine the statements and select the correct answer from the options:
Assertion (A): Well and tubewell irrigation vastly dominates the eastern and central agricultural landscapes of Rajasthan.
Reason (R): The presence of hard granitic rock structures and an exceptionally high water table makes well digging highly economical in the western desert districts.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

49. In the context of Rajasthan's water management, what exactly is 'Sem'?
(1) A traditional method of rainwater harvesting in Shekhawati
(2) A severe problem of waterlogging and soil salinity in canal command areas
(3) A financial subsidy given to farmers for drip irrigation installation
(4) A specific type of drought-resistant crop

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9. (3) Bhikhabhai Sagwara Canal
The Indira Gandhi Canal Project features several lift canals, such as Kanwar Sen and Panna Lal Barupal, designed to irrigate elevated desert lands. In contrast, the Bhikhabhai Sagwara Canal is a distinct irrigation project located in southern Rajasthan. It is designed to utilize the waters of the Mahi River to benefit the tribal-dominated Dungarpur district through traditional gravity flow.

10. (1) I, II and IV
The Indira Gandhi Canal Project was executed in two major phases to systematically extend its reach across the desert. Phase I focused on the northern districts, while Phase II reached the deep west. While the main canal provides gravity flow to the right side, lift canals serve the left. The project's terminal point was eventually extended to Gadra Road.

11. (3) Statement I is correct, but Statement II is incorrect.
Most branches of the Indira Gandhi Canal take off from the right bank because the natural land slope facilitates gravity flow in that direction. The Rawatsar branch is the notable exception, originating from the left bank. Contrary to certain misconceptions, the general terrain slope is towards the west and south, making right-bank distribution more feasible for irrigation across the command.

12. (2) Satluj and Beas
The Indira Gandhi Canal relies on a perennial supply of water diverted from the Satluj and Beas rivers. This water is collected at the Harike Barrage in Punjab. This reliable source is crucial for sustaining the extensive irrigation network across the arid Thar Desert, where local rainfall and seasonal rivers are insufficient to support intensive modern agricultural activities and human settlements.

13. (2) A-iii, B-ii, C-i, D-iv
Several lift canals of the Indira Gandhi Canal Project were renamed to honor prominent figures. The Bikaner-Lunkaransar canal became the Kanwar Sen Lift Canal. The Gajner canal was renamed Panna Lal Barupal, while the Kolayat and Phalodi canals were renamed Dr. Karni Singh and Guru Jambheshwar lift canals, respectively. These canals are vital for providing water to elevated desert regions.

14. (4) Hanumangarh
The Indira Gandhi Main Canal enters Rajasthan at Masitawali Head, which is located in the Hanumangarh district. This entry point marks the transition from the feeder canal to the main distribution system. From this location, the canal continues its journey southwestwards, providing essential water for irrigation and drinking purposes to several thirsty districts across the western desert of the state.

15. (1) I, II, III and IV
The Indira Gandhi Canal network is a massive infrastructure project benefiting several arid districts. Bikaner, Jaisalmer, Churu, and Hanumangarh receive significant water for irrigation and drinking. However, Udaipur is located in the hilly southern part of the state and falls outside the command area of this canal system, relying instead on local rivers and different southern irrigation projects.

16. (2) Kanwar Sen Lift Canal
The Kanwar Sen Lift Canal is recognized as the longest among the lift canals of the Indira Gandhi Canal Project. It was formerly known as the Bikaner-Lunkaransar Lift Canal. This engineering marvel was named after the visionary engineer who first conceived the idea of bringing Himalayan waters to the Rajasthan desert, playing a pivotal role in the entire project's technical development.

17. (2) Gadra Road
The Indira Gandhi Canal project was designed to stretch deep into the western desert. While the main canal concludes earlier, the extended distribution network, including the Sagarmal Gopa branch, reaches its final operational destination at Gadra Road in the Barmer district. This expansion ensures that even the most remote border areas benefit from the life-giving waters of this massive system.

18. (1) Chaudhary Kumbharam - Kanwar Sen - Panna Lal Barupal - Dr. Karni Singh
The lift canals of the Indira Gandhi Canal are arranged geographically to serve different latitudes. From north to south, the sequence

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List II: (District)

i. Kota
ii. Jhalawar
iii. Bhilwara
iv. Udaipur

(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-iv, C-i, D-ii
(3) A-iv, B-ii, C-iii, D-i
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

74. Which of the following is correctly matched regarding minor/medium irrigation projects in Rajasthan?
(1) Som Kamla Amba - Dungarpur
(2) Orai Irrigation Project - Bikaner
(3) Jakham Dam - Jaipur
(4) Parwan Project - Jaisalmer
(5) Question not attempted

75. Consider the following districts regarding the adoption of tank irrigation:

I. Bhilwara
II. Udaipur
III. Jaisalmer
IV. Bikaner
V. Chittorgarh

Which of the above represent districts where traditional tank irrigation is prominent due to the underlying topography?
(1) I, II and V
(2) I, III and IV
(3) II, III and V
(4) I, IV and V
(5) Question not attempted

76. In canal irrigation terminology, what is the fundamental difference between a 'flow canal' and a 'lift canal'?
(1) Flow canals are entirely natural streams, while lift canals are artificial cemented channels.
(2) Flow canals use gravity, while lift canals require pumping water against the gradient.
(3) Flow canals provide drinking water, whereas lift canals are exclusively for industrial use.
(4) Flow canals are situated above ground level, while lift canals are sub-surface pipeline networks.
(5) Question not attempted

77. Which state shares the water of the Gurgaon Canal along with Rajasthan?
(1) Punjab
(2) Madhya Pradesh
(3) Haryana
(4) Gujarat
(5) Question not attempted

78. The following rivers contribute significantly to various irrigation projects benefiting Rajasthan:

A. Chambal
B. Mahi
C. Banas
D. Luni

Arrange these river basins according to their general geographical alignment from North-East to South-West in the context of their major dam locations (e.g., Bisalpur, Kota Barrage, Jawai, Mahi Bajaj).
(1) C, A, B, D
(2) C, A, D, B
(3) A, C, D, B
(4) A, D, C, B
(5) Question not attempted

79. Which of the following represents the most appropriate overall solution for achieving long-term sustainable irrigation in the drought-prone regions of Rajasthan?
(1) Using rainwater harvesting, micro-irrigation, and adopting drought-resistant crops.
(2) Transitioning purely to high-water-demand cash crops to increase the wealth of the local community.
(3) Expanding traditional flood irrigation systems extensively into the deepest parts of the Thar Desert.
(4) Completely banning all agricultural activities in regions receiving less than 50 cm of annual rainfall.
(5) Question not attempted

80. The Eastern Rajasthan Canal Project (ERCP) aims to harvest surplus water from which major river basin during the rainy season to address irrigation and drinking water needs?
(1) Luni Basin along with its numerous ephemeral tributaries in western Rajasthan
(2) Chambal Basin including tributaries like Parbati and Kalisindh

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that the total irrigation potential serves only Rajasthan is incorrect, as Madhya Pradesh also benefits significantly from the system.

28. (2) Both A and R are true but R is not the correct explanation of A.
The Chambal Valley Project has revolutionized agriculture in south-eastern Rajasthan by providing a reliable water supply. The Kota Barrage is unique in the series as it is used exclusively for irrigation via its canal systems, whereas the other three dams are also utilized for power generation. While both statements are factual, the specific function of the barrage does not explain agricultural productivity.

29. (3) Parts of Rajasthan and Madhya Pradesh
The Right Main Canal of the Chambal Project, which begins at the Kota Barrage, is an inter-state distribution channel. It traverses through the districts of Kota and Baran in Rajasthan before entering Madhya Pradesh. This infrastructure is vital for the agricultural stability of both states, showcasing a successful model of cooperative water management between neighboring regional governments for shared irrigation benefits.

30. (2) II, III and IV
The Chambal River cascade includes four major structures. Gandhi Sagar is located in Madhya Pradesh. The remaining three—Rana Pratap Sagar in Chittorgarh, Jawahar Sagar in Kota, and the Kota Barrage—are situated within the geographical boundaries of Rajasthan. These structures are essential for regulating river flow, generating electricity, and providing water for extensive irrigation throughout the state's south-eastern region.

31. (1) Gandhi Sagar
Gandhi Sagar Dam is the first and largest of the four dams built on the Chambal River. It is located in the Mandsaur district of Madhya Pradesh. It serves as the primary storage reservoir for the entire cascade system, regulating the water flow that is subsequently used by the downstream dams in Rajasthan for both power generation and irrigation purposes through canals.

32. (2) Kota and Bundi
The Left Main Canal originating from the Kota Barrage is designed to serve the irrigation needs within Rajasthan. It specifically provides water to the agricultural lands of the Kota and Bundi districts. This canal system has significantly boosted the production of water-intensive crops in these areas, contributing to the overall agricultural prosperity and economic stability of the south-eastern part of the state.

33. (1) A-iii, B-i, C-iv, D-ii
Irrigation dams in Rajasthan are strategically located. The Jawai Dam is in Pali, often called the lifeline of Marwar. Bisalpur Dam, the state's largest, is situated in Tonk. Mahi Bajaj Sagar Dam is located in Banswara to serve tribal areas. Rana Pratap Sagar, a major hydroelectric and irrigation structure on the Chambal River, is situated in the Chittorgarh district of Rajasthan.

34. (1) Jawai Dam
Bisalpur, Meja, and Isarda dams are all part of the Banas River basin or its tributaries. In contrast, the Jawai Dam is built on the Jawai River, which is a major tributary of the Luni River. This makes the Jawai Dam a part of the Luni basin, distinguishing it from the other reservoirs that belong to the Banas drainage system geographically.

35. (3) I, II and III
The Chambal Canal irrigation system is a major contributor to the agricultural output of south-eastern Rajasthan. The principal command area for this network encompasses the districts of Kota, Bundi, and Baran. These districts benefit from an extensive network of canals originating from the Kota Barrage, enabling the cultivation of various cash crops and enhancing local rural economies through reliable water.

36. (4) Mahi Bajaj Sagar Project
The Mahi Bajaj Sagar Project is a vital multi-purpose venture designed to promote the welfare of the tribal populations in southern Rajasthan. By harnessing the waters of the Mahi River, it provides irrigation and drinking water primarily to the Banswara and Dungarpur districts. This project has been instrumental in improving the agricultural productivity and socio-economic status of these southern tribal regions.

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Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Gypsum mining in Rajasthan holds immense agricultural significance in northern India.
Reason (R): Gypsum is widely used as a soil amendment to reclaim alkaline and saline soils.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

22. Identify the correct statement regarding iron ore distribution in Rajasthan:
(1) Rajasthan is the leading producer of high-grade iron ore across the Indian subcontinent
(2) Jaipur, Dausa, and Bhilwara districts host the most significant iron ore deposits in the state
(3) Iron ore deposits in Rajasthan are strictly confined to the western desert districts
(4) Iron ore extracted in Rajasthan is exclusively exported to international markets without domestic use
(5) Question not attempted

23. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Non-Metallic Mineral)
A. Gypsum
B. Rock Phosphate
C. Mica
D. Limestone
List II: (Major Producing District)
i. Udaipur
ii. Bikaner
iii. Chittorgarh
iv. Bhilwara
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

24. A cement manufacturing corporation is looking to establish a new plant in Rajasthan to minimize raw material transportation costs. Which of the following districts provides the most ideal concept application of this location theory due to its abundant chemical and cement-grade mineral deposits?
(1) Chittorgarh
(2) Barmer
(3) Jaisalmer
(4) Churu
(5) Question not attempted

25. Consider the following statements about Tungsten in Rajasthan:
I. Tungsten is a strategically important mineral used in making specialized hard steel alloys.
II. The Degana deposit in Nagaur was developed heavily during the World Wars for its strategic utility.
III. Tungsten is actively mined in massive quantities across all districts of the Aravalli range.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

26. Consider the following statements about the historical Zawar mines:
I. They are located in the Udaipur district.
II. They have historical remnants of ancient zinc distillation processes.
III. They are entirely exhausted and currently have no operational significance.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) II only
(3) III only
(4) I and II only
(5) Question not attempted

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27. Consider the following statements about sandstone deposits in Rajasthan:
I. Sandstone from Dholpur is recognized worldwide for its unique red and pink hues.
II. Bharatpur region holds significant reserves of building-grade sandstone.

security, serving as a primary source for both irrigation and large-scale urban drinking water projects.

47. (1) Jaipur and Ajmer
The Bisalpur Dam is the primary lifeline for several major urban centers in central Rajasthan. It provides a steady supply of drinking water to the capital city of Jaipur, as well as the city of Ajmer. This project has significantly reduced the dependence of these growing metropolitan areas on depleting groundwater resources, ensuring a more sustainable urban water management system.

48. (3) A is true but R is false.
Well and tubewell irrigation is prevalent in eastern Rajasthan where soil is alluvial and groundwater is relatively shallow. Conversely, in the western desert districts, the presence of hard rock layers and extremely deep, often saline, aquifers makes traditional well digging difficult and expensive. This geographical constraint limits the feasibility of widespread groundwater-based irrigation in the west, contradicting the reasoning provided.

49. (2) A severe problem of waterlogging and soil salinity in canal command areas
In the context of Rajasthan's canal command areas, 'Sem' refers to the detrimental environmental phenomenon of waterlogging. It occurs when excessive irrigation and seepage cause the water table to rise to the surface. This leads to soil salinity and alkalinity, making the land unfit for cultivation and posing a major challenge to the sustainability of long-term canal irrigation projects in deserts.

50. (1) I, II and III
The Bisalpur Dam, built on the Banas River in Tonk, is Rajasthan's largest concrete gravity dam and a vital drinking water source for Jaipur. While it provides irrigation to surrounding areas in Tonk and Sawai Madhopur, it does not serve the northern districts of Ganganagar and Hanumangarh, which are instead irrigated by the Gang, Bhakra, and Indira Gandhi canal systems.

51. (3) Bhilwara
Tank irrigation is a traditional method where rainwater is collected in large depressions or constructed reservoirs. This method is most prominent in the Bhilwara district. The region's hilly and rocky topography makes the construction of tanks and the storage of surface runoff more feasible and effective compared to the sandy plains of the west or the northern canal irrigation belts.

52. (4) Jaisalmer
The Bisalpur Project is designed to supply drinking water to several districts in central and eastern Rajasthan, including Jaipur, Ajmer, and Tonk. However, Jaisalmer is located in the far western part of the state and falls entirely outside the reach of the Bisalpur distribution network. Jaisalmer relies instead on the Indira Gandhi Canal and local traditional water harvesting methods.

53. (1) A-ii, B-iii, C-iv, D-i
Irrigation projects in Rajasthan draw water from various rivers. The Gang Canal uses the Satluj. The Indira Gandhi Main Canal draws from the confluence of the Satluj and Beas at Harike. The Narmada Canal utilizes water from the Narmada River via the Sardar Sarovar Dam. The Gurgaon Canal is supplied by the Yamuna River to irrigate the Bharatpur district.

54. (2) Deep aquifers obstructed by hard rock topography
In southern Rajasthan, the rugged terrain of the Aravalli hills and the underlying hard granitic rock structures pose significant challenges to groundwater extraction. These geological features make the digging of wells and tubewells difficult and costly. Consequently, farmers in these regions often rely more on surface water sources, such as seasonal rivers and tanks, for their various agricultural irrigation needs.

55. (1) I, II and III
The expansion of canal irrigation in the western desert has introduced several ecological problems. Primary among these are waterlogging, also known as 'Sem', and the resulting soil salinity and alkalinity. These issues occur because the intensive application of water in an arid environment with poor natural drainage causes the water table to rise, bringing harmful salts to the soil surface.

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56. (1) Gypsum
Gypsum is a naturally occurring mineral widely used in Rajasthan for soil reclamation. It is particularly effective in treating soils that have become unproductive due to high alkalinity and waterlogging, common problems in canal command areas. By applying gypsum, farmers can improve soil structure and neutralize harmful salts, thereby restoring the fertility of the land for agricultural use and production.

57. (1) Both statements are correct, and Statement II explains Statement I.
In the Indira Gandhi Canal command area, soil salinity is exacerbated by the presence of a subsurface hardpan of gypsum or clay. This layer prevents the downward percolation of excess irrigation water, leading to a perched water table. Through capillary action, water rises to the surface and evaporates, leaving behind salts that degrade the soil and create the waterlogging problem.

58. (1) C, A, B, D
Wells and tubewells are the largest source of irrigation in Rajasthan, followed by canals. Tanks contribute a smaller but significant portion, particularly in certain hilly districts, while other traditional sources make up the remainder. This descending order reflects the state's heavy reliance on groundwater, despite the high-profile nature of large-scale canal projects like the Indira Gandhi Canal system.

59. (4) Implementing sub-surface drainage to mitigate waterlogging in the Chambal area
The Rajasthan Agricultural Drainage Research Project, known as RAJAD, was a collaborative initiative between the governments of India and Canada. Its primary focus was to address the severe waterlogging and soil salinity issues in the Chambal Canal command area. The project implemented advanced sub-surface drainage technologies to reclaim salt-affected lands and improve agricultural productivity in the south-eastern region.

60. (2) Blocks where groundwater extraction significantly exceeds the natural recharge
Groundwater authorities designate certain areas as 'Dark Zones' when the rate of groundwater extraction for agriculture and other uses far exceeds the natural recharge from rainfall. In these blocks, the water table is depleting at an alarming rate. Such a classification often leads to strict regulations on the installation of new tubewells to prevent the total exhaustion of aquifers.

61. (3) Bharatpur
The history of modern groundwater extraction in Rajasthan began in the early 20th century. The state's first tubewell was established in 1930 in the Bharatpur district. This pioneering effort marked a shift towards utilizing deep underground aquifers for irrigation, a practice that would eventually expand across the state and become the dominant method of watering crops in many agricultural regions.

62. (4) Safeda (Eucalyptus)
To combat the rising water table and waterlogging in the Indira Gandhi Canal area, 'biological drainage' is employed. This involves planting Safeda, or Eucalyptus trees, which have high transpiration rates. These trees act as natural pumps, drawing excess water from the ground and releasing it into the atmosphere, thereby helping to lower the water table and reclaim waterlogged agricultural lands.

63. (1) A-iii, B-iv, C-i, D-ii
Key terms in Rajasthan's water management include 'Sem', which refers to waterlogging and salinity. The 'Command Area' is the region served by a specific canal. 'Dark Zones' are areas with over-exploited groundwater. 'Biological Drainage' is the use of specific plants like Eucalyptus to manage excess soil moisture. These concepts are crucial for studying the state's complex irrigation landscape.

64. (2) Narmada Canal Project
The Narmada Canal Project in Rajasthan is a pioneer in water conservation technology. It was the first major project in India to make the use of sprinkler irrigation mandatory for the entire command area. This policy was implemented to ensure maximum water use efficiency and to prevent the common problems of waterlogging and soil salinity associated with traditional flood irrigation.

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65. (1) I and II
Micro-irrigation techniques like drip and sprinkler systems are highly effective in arid regions. The Narmada Canal Project mandates these methods to optimize limited water resources. By delivering water directly to the root zone or as a fine spray, these systems significantly reduce evaporation and seepage losses. They are essential for sustainable desert agriculture and long-term land productivity.

66. (1) Horticulture and fruit orchards
Drip irrigation is a precision method that is most economically and agronomically suitable for high-value horticulture and fruit orchards. In Rajasthan, this system is widely used for growing crops like citrus fruits, pomegranates, and olives. It allows for efficient water use, reduces weed growth, and ensures that plants receive the optimal amount of moisture and nutrients for maximum yield.

67. (3) Jalore
The Narmada Canal carries water from the Sardar Sarovar Dam in Gujarat into the arid regions of Rajasthan. It enters the state specifically in the Jalore district at Silu village. This project is a lifeline for the parched southern districts of Jalore and Barmer, providing essential water for irrigation through an advanced and regulated micro-irrigation distribution network system.

68. (1) Both A and R are true and R is the correct explanation of A.
Rajasthan faces a severe water crisis, holding 10 percent of India's land but only 1 percent of its surface water. This massive disparity makes the promotion of highly efficient drip and sprinkler irrigation technologies absolutely vital. Adopting these micro-irrigation methods is the only way to ensure a sustainable agricultural future for the state while managing its extremely limited resources.

69. (3) Jalore and Barmer
The Narmada Canal Project is specifically designed to provide irrigation and drinking water to the southernmost arid districts of Rajasthan. The primary beneficiaries of this project are the Jalore and Barmer districts. By utilizing a mandatory sprinkler system, the project aims to transform the local agricultural economy while preventing the environmental degradation often caused by traditional flood irrigation techniques.

70. (4) I, II, III and IV
Rajasthan has implemented various initiatives to manage its water resources. RAJAD focuses on drainage and waterlogging. The Mukhya Mantri Jal Swavlamban Abhiyan promotes local water harvesting. The Command Area Development Programme improves canal efficiency. The Narmada Project mandates micro-irrigation. Together, these programs represent a multi-pronged approach to improving water use efficiency and addressing the ecological challenges of agricultural irrigation.

71. (4) Ravi and Beas
The Rajiv Gandhi Siddhmukh-Nohar Irrigation Project was designed to utilize Rajasthan's share of the surplus waters from the Ravi and Beas rivers. This water is diverted to provide irrigation to the parched northern plains. The project is a result of inter-state water sharing agreements and represents a significant effort to stabilize agriculture in areas far from perennial water sources.

72. (1) Churu and Hanumangarh
The Rajiv Gandhi Siddhmukh-Nohar Irrigation Project primarily benefits the northern districts of Churu and Hanumangarh. By bringing diverted Himalayan water to these arid regions, the project has enabled farmers to cultivate crops more reliably. This has had a positive impact on the local economy and helped mitigate the effects of frequent droughts that characterize these desert-edge districts.

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73. (1) A-iv, B-iii, C-ii, D-i
Rajasthan has numerous medium-scale irrigation projects. Som Kagdar is located in Udaipur. The Meja Dam is built on the Kothari River in Bhilwara. The Chhapi Project serves the Jhalawar district. The Sawan Bhadon project is a significant irrigation facility in Kota. These projects are essential for providing localized water security and supporting agriculture in their respective districts and surrounding areas.

74. (1) Som Kamla Amba - Dungarpur
The Som Kamla Amba project is a major irrigation initiative located in the Dungarpur district,

II. Rajpura-Dariba is a prominent lead-zinc mining area located in the Rajsamand district.
III. Rampura-Agucha is primarily known for its extensive underground mining operations for iron ore.

Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

7. In Rajasthan, silver is predominantly obtained not from independent silver mines, but rather as a highly valuable by-product during the processing of which of the following mineral ores?
(1) Iron Ore
(2) Rock Phosphate
(3) Tungsten
(4) Lead and Zinc
(5) Question not attempted

8. Consider the following statements about copper mining and processing in Rajasthan:
I. The Khetri Copper Complex is established in the Jhunjhunu district.
II. Singhana mines are highly significant for copper extraction in the state.
III. Rajasthan holds a monopoly in copper production, being the sole producer in India.
IV. Copper deposits in the Khetri belt are mostly found in the form of chalcopyrite.

Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, II and IV only
(4) I, III and IV only
(5) Question not attempted

9. Which of the following statements regarding iron ore deposits in Rajasthan is incorrect?
(1) Rajasthan possesses relatively limited deposits of iron ore compared to states like Odisha and Jharkhand
(2) The Morija-Banol area in Jaipur is a significant source of iron ore in the state
(3) Iron ore deposits in Rajasthan are predominantly of the highest grade magnetite variety
(4) The Pur-Banera belt in Bhilwara district contains notable iron ore deposits
(5) Question not attempted

10. Consider the following statements concerning the Mineral Policy and mining sector of Rajasthan:
I. The primary objective of the Rajasthan Mineral Policy is to promote zero-waste mining and sustainable development.
II. Illegal mining in the Aravalli region has been a major ecological challenge addressed by the policy.
III. The policy heavily discourages the use of modern technology to protect traditional manual mining jobs.
IV. Mineral beneficiation is promoted to utilize low-grade ores effectively.
V. The state ensures the reclamation of mined-out areas as part of its environmental clearance mandate.

Which of the above statement(s) is/are correct?
(1) I, II, III and V only
(2) I, II, IV and V only
(3) II, III, IV and V only
(4) I, III, IV and V only
(5) Question not attempted

11. The heavy concentration of the cement industry in districts like Chittorgarh, Kota, and Nagaur is a direct economic effect of the abundant availability of which of the following minerals?
(1) Rock Phosphate
(2) Gypsum
(3) Mica
(4) Limestone
(5) Question not attempted

12. Which of the following represents the correct descending order of districts in Rajasthan based on the historical abundance and production of Gypsum deposits?
(1) Bikaner, Nagaur, Barmer, Jaisalmer
(2) Nagaur, Jaisalmer, Barmer, Bikaner
(3) Barmer, Jaisalmer, Nagaur, Bikaner
(4) Jaisalmer, Barmer, Bikaner, Nagaur
(5) Question not attempted

13. Which of the following is not recognized as a major lead-zinc mining region in Rajasthan?

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CHAPTER 25

Minerals : Metallic and Non Metallic

1. Which of the following statements most accurately reflects the national significance of Rajasthan's mineral wealth?
(1) Rajasthan is the sole producer of almost all non-metallic minerals across the Indian subcontinent
(2) Rajasthan is known as the 'Museum of Minerals' due to its diverse and vast mineral wealth
(3) Rajasthan possesses the nation's largest combined reserves of coal, lignite, and petroleum
(4) Rajasthan contributes to more than eighty percent of India's total metallic mineral production
(5) Question not attempted

2. Read the given statements and select the correct answer from the options provided:
Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): The Degana mines in Nagaur district represent a strategically significant mineral deposit in India.
Reason (R): Rajasthan possesses the only major workable deposit of tungsten in India, primarily found as wolframite ore.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

3. Read the given statements and select the correct answer from the options provided:
Statement I: Rampura-Agucha is globally recognized as one of the world's largest zinc mines.
Statement II: The Rampura-Agucha mine is situated in the Udaipur district of Rajasthan.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

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4. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Mineral)
A. Lead and Zinc
B. Copper
C. Tungsten
D. Iron Ore
List II: (Major Mining Area in Rajasthan)
i. Morija-Banol
ii. Degana
iii. Khetri
iv. Zawar
(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-iv, C-i, D-ii
(3) A-iv, B-i, C-ii, D-iii
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

5. Identify the odd one out among the following minerals based on their classification as metallic or non-metallic minerals in Rajasthan:
(1) Lead
(2) Zinc
(3) Gypsum
(4) Copper
(5) Question not attempted

6. Consider the following statements regarding lead and zinc deposits in Rajasthan:
I. Zawar mines possess some of the oldest historical evidence of zinc smelting in the world.

serving the tribal population. Other matches are incorrect: the Orai project is in Chittorgarh, the Jakham Dam is in Pratapgarh, and the Parwan project is intended for the Baran and Jhalawar regions. These localized projects are critical for regional agricultural development and water security.

75. (1) I, II and V
Traditional tank irrigation is most prominent in districts with undulating or rocky terrain that facilitates the storage of surface runoff. Bhilwara, Udaipur, and Chittorgarh are prime examples where this method is widely used. In contrast, the sandy desert districts of Jaisalmer and Bikaner have high infiltration rates, making large-scale surface tank irrigation less common and less effective.

76. (2) Flow canals use gravity, while lift canals require pumping water against the gradient.
In irrigation engineering, a 'flow canal' relies entirely on the force of gravity to move water from a higher elevation to lower agricultural fields. In contrast, a 'lift canal' is required when the land to be irrigated is at a higher elevation than the water source. In such cases, water must be mechanically pumped to reach the destination.

77. (3) Haryana
The Gurgaon Canal, also known as the Yamuna Link Canal, is a joint project involving the states of Haryana and Rajasthan. It draws water from the Yamuna River at the Okhla Barrage. This canal serves the irrigation and drinking water needs of the Bharatpur district in Rajasthan, showcasing another example of successful inter-state cooperation in managing shared water resources.

78. (2) C, A, D, B
Aligning major dam locations from the North-East toward the South-West of Rajasthan, one starts with the Bisalpur Dam on the Banas River in the central-east. Moving south, there is the Kota Barrage on the Chambal. Further west is the Jawai Dam on a Luni tributary, and finally, the Mahi Bajaj Sagar on the Mahi River in the south.

79. (1) Using rainwater harvesting, micro-irrigation, and adopting drought-resistant crops.
Long-term agricultural sustainability in drought-prone Rajasthan requires an integrated approach. This involves harvesting every drop of rainwater, utilizing highly efficient micro-irrigation systems like drip and sprinklers, and shifting towards drought-resistant crop varieties. These strategies help maximize the utility of limited water resources while protecting the fragile desert ecology from problems like waterlogging and soil salinity.

80. (2) Chambal Basin including tributaries like Parbati and Kalisindh
The Eastern Rajasthan Canal Project is a massive initiative to address water scarcity in thirteen districts. It aims to capture surplus monsoon runoff from the Chambal River basin, including its tributaries like the Parbati and Kalisindh. This water will be diverted to water-deficient areas for drinking and irrigation, providing a long-term solution to the region's chronic water problems.

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(1) Zawar
(2) Rajpura-Dariba
(3) Kho-Dariba
(4) Rampura-Agucha
(5) Question not attempted

14. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Copper Mines)
A. Khetri-Singhana
B. Kho-Dariba
C. Pur-Dariba
D. Bhagot-ka-Bas
List II: (District)
i. Alwar
ii. Bhilwara
iii. Jhunjhunu
iv. Sikar
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-iv, C-iii, D-i
(5) Question not attempted

15. Identify the correctly matched pair regarding non-metallic minerals and their major deposit area in Rajasthan:
(1) Rock Phosphate — Jhamarkotra
(2) Gypsum — Morija Banol
(3) Mica — Makrana
(4) Limestone — Degana
(5) Question not attempted

16. The world-famous white marble used in the construction of the Taj Mahal and the Victoria Memorial was primarily sourced from which of the following mining locations in Rajasthan?
(1) Rajsamand
(2) Makrana
(3) Rikhabdev
(4) Bhainslana
(5) Question not attempted

17. Which of the following is the most appropriate reason for the continuous emphasis on mineral beneficiation in Rajasthan's mining sector?
(1) To increase the state's total geographical area under specialized mining operations
(2) To scientifically upgrade low-grade mineral ores to industrial standards
(3) To completely halt the extraction and refining of metallic mineral resources
(4) To ensure all minerals are exported strictly in their rawest natural state
(5) Question not attempted

18. Consider the following prominent mineral mining centres of Rajasthan and arrange them from North to South geographically:
I. Khetri (Jhunjhunu)
II. Rampura-Agucha (Bhilwara)
III. Zawar (Udaipur)
IV. Rajpura-Dariba (Rajsamand)
Which of the following represents the correct sequence?
(1) I, II, IV, III
(2) I, IV, II, III
(3) II, I, III, IV
(4) IV, III, II, I
(5) Question not attempted

19. Read the given statements and select the correct answer from the options provided:
Statement I: Bhilwara and Ajmer are the principal mica-producing districts in Rajasthan.
Statement II: Mica from Rajasthan is primarily utilized in the electrical and electronics industry due to its excellent insulating properties.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

20. The red sandstone heavily utilized in the construction of historically and politically significant monuments like the Red Fort and the Parliament House of India is predominantly extracted from which districts of Rajasthan?
(1) Udaipur and Rajsamand
(2) Jaisalmer and Barmer
(3) Jalore and Sirohi
(4) Dholpur and Bharatpur
(5) Question not attempted

21. Read the given statements and select the correct answer from the options provided:

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37. (1) (45:55)
The Mahi Bajaj Sagar Project is a collaborative effort between Rajasthan and Gujarat. According to the inter-state agreement, the financial investment and water sharing for irrigation are divided in a ratio of 45 percent for Rajasthan and 55 percent for Gujarat. This partnership ensures the optimal utilization of the Mahi River's resources for the mutual benefit of both neighboring states.

38. (1) Kota Barrage - Jawahar Sagar - Rana Pratap Sagar - Gandhi Sagar
Following the flow of the Chambal River from the plains back toward the hills, the dams are sequenced from North to South. The Kota Barrage is the furthest downstream, followed by Jawahar Sagar, then Rana Pratap Sagar, and finally Gandhi Sagar, which is the furthest upstream in Madhya Pradesh. This cascade allows for maximum efficiency in water storage and power generation.

39. (4) Banswara
The Mahi Bajaj Sagar Dam, the second largest dam in Rajasthan, is located at Borigama near Banswara. It is built across the Mahi River. This massive structure serves as the cornerstone of the region's irrigation and hydroelectric network, specifically targeting the developmental needs of the tribal-dominated southern districts while also providing water to neighboring areas in the state of Gujarat.

40. (1) Entire 100 percent is allocated to Rajasthan
Under the terms of the bilateral agreement between Rajasthan and Gujarat for the Mahi Bajaj Sagar Project, a specific arrangement exists for power. While water and costs are shared, the entire 100 percent of the hydroelectricity generated from the project is allocated exclusively to the state of Rajasthan. This provides a significant boost to the state's rural electrification and energy security.

41. (3) Mahi Bajaj Sagar Project
The Bhikhabhai Sagwara Canal is a significant irrigation channel in southern Rajasthan. It was constructed as part of the Mahi Bajaj Sagar Project. The canal was specifically designed to provide irrigation facilities to the tribal areas of the Dungarpur district, utilizing the regulated discharge from the Mahi River to enhance local agriculture and support the regional economy effectively through tribal development.

42. (1) It provides drinking water and irrigation, known as the 'Amrit Sarovar of Marwar'.
The Jawai Dam, constructed across the Jawai River in Pali, is of immense importance to the arid western region. It serves as a dual-purpose project providing both drinking water and irrigation. Due to its life-sustaining role in the water-scarce desert landscape, it is popularly referred to as the 'Amrit Sarovar' or the 'Nectar Lake' of the Marwar region by locals.

43. (1) A-iii, B-i, C-iv, D-ii
Rajasthan has a rich history of traditional water management. Khadins are runoff farming systems unique to Jaisalmer. Johads are small earthen check dams common in the Shekhawati region. Tank irrigation is a hallmark of the Bhilwara district due to its rocky terrain. Step-wells, or Baoris, are intricate urban heritage structures found famously in cities like Bundi and Jodhpur.

44. (2) Sei Diversion Project
To maintain water levels in the Jawai Dam during years of low rainfall, the Sei Diversion Project was implemented. This project involves a tunnel that transfers water from the Sei River, a tributary of the Sabarmati, into the Jawai reservoir. This diversion ensures a reliable drinking water supply for Jodhpur and Pali, even during challenging summer months or prolonged drought periods.

45. (1) I and II
The Mahi Bajaj Sagar Project is situated on the Mahi River in Banswara and is essential for tribal area development. It provides extensive irrigation to southern Rajasthan. However, it is not funded by the Desert Development Programme, as that program focuses on the arid western districts. Instead, it is a joint multi-purpose venture between the Rajasthan and Gujarat state governments.

46. (4) Banas
The Bisalpur Dam is a major gravity dam located in the Tonk district of Rajasthan. It is constructed across the Banas River, which is a major tributary of the Chambal. This dam is the largest in the state and plays a critical role in regional water

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III. Sandstone is fundamentally a type of sedimentary rock.
IV. The mining of sandstone in these districts generates substantial direct employment.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, II and IV only
(3) II, III and IV only
(4) I, III and IV only
(5) Question not attempted

28. Identify the odd one out concerning the major districts known for significant mica deposits and mica-brick manufacturing in Rajasthan:
(1) Bhilwara
(2) Jaisalmer
(3) Ajmer
(4) Tonk
(5) Question not attempted

29. Consider the following statements regarding Granite distribution in Rajasthan:
I. Granite is an intrusive igneous rock widely distributed across multiple districts of Rajasthan.
II. Jalore is famously recognized as the 'Granite City' of Rajasthan.
III. The granite industry in Rajasthan is exclusively limited to the production of black granite.
IV. Granite mining involves modern mechanized wire-saw techniques to extract large blocks.
V. Barmer and Sirohi are also notable districts for diverse granite deposits.
Which of the above statement(s) is/are correct?
(1) I, II, III and IV only
(2) I, II, IV and V only
(3) II, III, IV and V only
(4) I, III, IV and V only
(5) Question not attempted

30. Which of the following statements concerning Limestone deposits in Rajasthan is correct?
(1) Limestone is entirely absent in the western arid desert districts of the state of Rajasthan
(2) Limestone is primarily categorized by geologists as an ore of metallic lead and zinc
(3) Rajasthan imports its entire requirement of limestone for the cement industry from other states
(4) Sanu area in Jaisalmer is renowned for producing high-grade steel melting shop (SMS) limestone
(5) Question not attempted

31. The Jamsar mine, historically recognized as one of the largest deposits of its kind in India, is famous for the extraction of which mineral?
(1) Gypsum
(2) Rock Phosphate
(3) Tungsten
(4) Limestone
(5) Question not attempted

32. What is the primary environmental cause-and-effect relationship associated with unscientific and illegal mining operations in the Aravalli hills?
(1) It leads to a significant increase in the groundwater table of the surrounding desert
(2) It causes severe deforestation, biodiversity loss, and disruption of natural drainage
(3) It results in an increased frequency of tectonic earthquakes within the Aravalli range
(4) It enhances the fertility of agricultural soils due to the settling of fine rock dust
(5) Question not attempted

33. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Grade of Limestone)
A. Steel Grade (SMS)
B. Chemical Grade
C. Cement Grade
D. Yellow Limestone (Decorative)
List II: (Prominent Region/District)
i. Sanu (Jaisalmer)
ii. Gotan (Nagaur)
iii. Nimbahera (Chittorgarh)
iv. Jaisalmer City region
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

34. Which of the following is not considered a primary challenge to the mining sector in Rajasthan?

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9. (3) Iron ore deposits in Rajasthan are predominantly of the highest grade magnetite variety
Iron ore deposits in Rajasthan are primarily of the hematite variety, which is found in districts like Jaipur, Dausa, and Bhilwara. Magnetite deposits are relatively rare compared to hematite in this region. The state's reserves are indeed limited compared to central and eastern Indian states, and locations like Morija-Banol and Pur-Banera are the recognized mining hubs locally.

10. (2) I, II, IV and V only
The Rajasthan Mineral Policy focuses on sustainable development, zero-waste mining, and ecological preservation in the Aravalli range. It promotes mineral beneficiation to maximize the utility of low-grade ores and mandates land reclamation. Conversely, the policy encourages modern technology to improve efficiency and safety, rather than discouraging it, making the statement about traditional manual jobs factually incorrect.

11. (4) Limestone
The heavy concentration of cement manufacturing plants in districts like Chittorgarh, Kota, and Nagaur is driven by the abundant availability of high-quality limestone. As the primary raw material for Portland cement, limestone availability minimizes transportation costs for the industry. Rajasthan's extensive sedimentary formations provide the necessary chemical and cement-grade limestone required for large-scale industrial production.

12. (1) Bikaner, Nagaur, Barmer, Jaisalmer
Rajasthan is the leading producer of gypsum in India, with deposits concentrated in the western and north-western arid regions. Historically, Bikaner has been the top producer, followed by Nagaur, which hosts the famous Got-Manglod deposits. Barmer and Jaisalmer also possess significant reserves. This descending order reflects the historical volume of extraction and the geological prevalence of the mineral.

13. (3) Kho-Dariba
Zawar, Rajpura-Dariba, and Rampura-Agucha are world-class lead and zinc mining centers located in Rajasthan. Kho-Dariba, situated in the Alwar district, is actually famous for its copper deposits rather than lead-zinc ores. Distinguishing between these mining belts is crucial for understanding the geographical distribution of metallic minerals, as each site is associated with specific geological ore formations.

14. (1) A-iii, B-i, C-ii, D-iv
Khetri-Singhana is the most prominent copper belt located in the Jhunjhunu district. Kho-Dariba is a notable copper mining area situated in Alwar. Pur-Dariba is located in the Bhilwara district, contributing to the state's metallic wealth. Bhagot-ka-Bas is a copper deposit site in the Sikar district. These locations together form the core of copper mining operations within Rajasthan.

15. (1) Rock Phosphate — Jhamarkotra
Jhamarkotra in Udaipur is home to India's largest and most important rock phosphate deposit. In contrast, Morija-Banol is known for iron ore, not gypsum. Makrana is famous for its high-quality marble, which is a building stone, while mica is primarily found in Bhilwara. Degana is renowned for tungsten, which is a metallic mineral, not limestone.

16. (2) Makrana
The white marble used for iconic structures like the Taj Mahal and Victoria Memorial was sourced from Makrana in the Nagaur district. This marble is globally celebrated for its purity, durability, and lustrous white appearance. It was the first stone from Asia to be recognized as a Global Heritage Stone Resource, underscoring its historical and architectural significance.

17. (2) To scientifically upgrade low-grade mineral ores to industrial standards
Mineral beneficiation is the process of improving the quality of extracted ore by removing impurities. In Rajasthan, many mineral deposits are of low grade and cannot be used directly in industries. Beneficiation allows these resources to be scientifically upgraded to meet industrial standards, ensuring sustainable resource utilization and making the mining operations economically viable and competitive.

18. (1) I, II, IV, III
Geographically, Khetri in Jhunjhunu is the northernmost site among the group. Moving southwards, Rampura-Agucha in Bhilwara

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explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

42. Which of the following statements regarding Granite in Rajasthan is incorrect?
(1) Granite deposits in Rajasthan are primarily sedimentary formations found solely in the Thar Desert
(2) Granite possesses high compressive strength making it excellent for heavy construction and flooring
(3) The processing and polishing of granite represents a major secondary industry in districts like Jalore and Kishangarh
(4) Significant deposits of varied colored granites are found in the Aravalli and its adjacent regions
(5) Question not attempted

43. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Iron Ore Mining Area)
A. Morija-Banol
B. Nathra-Ki-Pal
C. Neemla-Raisela
D. Chomu-Samod
List II: (District)
i. Udaipur
ii. Dausa
iii. Jaipur
iv. Jaipur (Rural/Region)
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

44. The distinct properties of Dholpur and Bharatpur sandstone that make them highly desirable for monumental architecture include all EXCEPT:
(1) High durability against weathering
(2) Extreme transparency resembling glass
(3) Ease of carving and complex sculpting
(4) Uniform texture and attractive natural colors
(5) Question not attempted

45. Consider the following statements about silver production in Rajasthan:
I. Silver is primarily recovered during the smelting of zinc and lead concentrates.
II. Hindustan Zinc Limited is the principal entity responsible for silver recovery in the state.
III. Rajasthan produces only a negligible fraction (less than 1%) of India's total silver.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

46. Identify the odd one out concerning the typical mode of occurrence of the following mineral deposits in Rajasthan:
(1) Gypsum
(2) Rock Phosphate
(3) Limestone
(4) Copper
(5) Question not attempted

47. Consider the following statements about the challenges faced by the mining sector in Rajasthan:
I. Depletion of high-grade ores forces industries to rely on complex beneficiation of low-grade ores.
II. Strict environmental regulations often require mining projects to undergo rigorous clearance processes.
III. Unregulated and illegal mining leads to significant losses to the state exchequer.
IV. The mining sector faces absolutely no resistance or issues regarding land acquisition from local communities.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) I, II and III only
(5) Question not attempted

48. What is the primary cause-and-effect relationship explaining why silver production

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(1) Complete absence of an established transport infrastructure to move extracted minerals
(2) Over-exploitation leading to severe ecological degradation
(3) High incidence of occupational health hazards like silicosis among mineworkers
(4) Encroachment of mining activities into protected forest areas
(5) Question not attempted

35. What is the most appropriate central focus of the Rajasthan Mineral Policy concerning the socioeconomic conditions of mine workers?
(1) Completely replacing all manual mining labor with highly advanced automated robotic systems
(2) Drastically reducing labor wages to increase the global competitiveness of exported minerals
(3) Ensuring occupational health and safety while mitigating diseases like silicosis for workers
(4) Mandating that mine workers reside strictly within the underground mine premises at all times
(5) Question not attempted

36. The Degana mines in the Nagaur district are geographically associated with which specific hill feature known for tungsten deposits?
(1) Harshnath Hill
(2) Trikut Hill
(3) Chidiya-Tunk Hill
(4) Rewat Hill
(5) Question not attempted

37. Read the given statements and select the correct answer from the options provided:
Statement I: The Khetri Copper Complex was established by Hindustan Copper Limited (HCL), a public sector enterprise.
Statement II: The complex relies solely on imported copper concentrates and does not process ore from the local Singhana mines.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

38. Identify the correctly matched pair regarding the specific color of Marble and its famous source district in Rajasthan:
(1) Pink Marble — Makrana (Nagaur)
(2) Black Marble — Bhainslana (Jaipur)
(3) Green Marble — Dholpur
(4) White Marble — Rikhabdev (Udaipur)
(5) Question not attempted

39. In the context of Rajasthan's mineral wealth, why is the state often categorized as having a monopolistic advantage in certain sectors?
(1) Rajasthan is the only state in India permitted by the Constitution to export specific minerals
(2) Rajasthan's state government owns and manages all mining corporations across the whole of India
(3) Rajasthan entirely prohibits private sector involvement in any form of mineral extraction
(4) Rajasthan holds near 100% production share in minerals like Lead, Zinc, and Wollastonite
(5) Question not attempted

40. The rock phosphate deposits in the Jaisalmer district are geographically heavily concentrated in which of the following prominent areas?
(1) Birmania and Fatehgarh
(2) Jhamarkotra and Maton
(3) Zawar and Mochia
(4) Morija and Banol
(5) Question not attempted

41. Read the given statements and select the correct answer from the options provided:
Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): The mica mining industry in Rajasthan has faced significant economic decline over the past few decades.
Reason (R): The advent of synthetic substitutes and alternative insulating materials has drastically reduced the global industrial demand for natural mica.
(1) Both A and R are true and R is the correct

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55. Identify the correctly matched pair of the mineral and its exclusive major deposit in Rajasthan:
(1) Lead-Zinc — Makrana (Nagaur)
(2) Copper — Jhamarkotra (Udaipur)
(3) Iron Ore — Sanu (Jaisalmer)
(4) Tungsten — Degana (Nagaur)
(5) Question not attempted

56. Which of the following statements concerning Makrana Marble is correct?
(1) It was the first stone resource in Asia designated as a Global Heritage Stone Resource by IUGS
(2) It is exclusively a black, heavily veined variety of sedimentary rock found in western districts
(3) The Makrana marble deposits are entirely exhausted and mining has been banned for several decades
(4) It is primarily utilized as a raw material for manufacturing high-quality agricultural fertilizers
(5) Question not attempted

57. Consider the following prominent structural regions associated with Lead and Zinc mineralization in Rajasthan and arrange them from North to South:
I. Rampura-Agucha
II. Rajpura-Dariba
III. Zawar
Which of the following represents the correct sequence?
(1) I, II, III
(2) III, II, I
(3) II, I, III
(4) I, III, II
(5) Question not attempted

58. The large-scale extraction of Rock Phosphate from the Udaipur and Jaisalmer regions is most appropriately justified by the national necessity to produce which essential commodity?
(1) Phosphatic Fertilizers like SSP and DAP
(2) Portland Cement
(3) High-tension electrical insulators
(4) Refractory bricks for steel furnaces
(5) Question not attempted

59. Which of the following statements accurately recalls the nature of Rock Phosphate deposits found in the Jaisalmer district?
(1) They are high-grade deposits found exclusively in deep underground magmatic veins of the Aravallis
(2) They are entirely composed of synthetic phosphate created through ancient metallurgical processes
(3) They are structurally identical to the highly crystalline apatite deposits of the southern India region
(4) They are low-grade, sedimentary phosphatic nodules occurring primarily in the Birmania area
(5) Question not attempted

60. The application of Gypsum in agriculture relies fundamentally on which of the following chemical concepts?
(1) Its ability to significantly increase the soil's alkalinity by adding excess sodium ions to it
(2) Its capacity to replace sodium ions with calcium ions, improving soil structure and percolation
(3) Its extremely high nitrogen content which acts as a direct growth hormone for several major crops
(4) Its highly exothermic reaction with water that warms the soil significantly during winter seasons
(5) Question not attempted

61. Read the given statements and select the correct answer from the options provided:
Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R):
Assertion (A): Beneficiation plants for Rock Phosphate have been established at Jhamarkotra in Udaipur.
Reason (R): The locally extracted rock phosphate ore contains high levels of silica and dolomite impurities that must be removed to upgrade it for fertilizer grade.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.

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(5) Question not attempted

62. Which of the following statements regarding silver mining in Rajasthan is incorrect?
(1) Silver is a precious metal primarily extracted as a by-product of lead and zinc
(2) The Zawar mines have a long historical record of extracting silver-bearing ores
(3) The presence of silver significantly increases the economic viability of lead-zinc mining operations
(4) Rajasthan possesses independent, extremely large pure silver mines in the Thar desert
(5) Question not attempted

63. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Famous Mining Area)
A. Jhamarkotra
B. Makrana
C. Rampura-Agucha
D. Khetri
List II: (Corresponding Mineral)
i. Marble
ii. Copper
iii. Rock Phosphate
iv. Zinc
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-iii, C-ii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

64. The sandstone deposits of Rajasthan, particularly from districts like Jodhpur, Bundi, and Dholpur, are structurally classified as which type of rock?
(1) Intrusive Igneous Rock
(2) Sedimentary Rock
(3) Extrusive Volcanic Rock
(4) High-grade Metamorphic Rock
(5) Question not attempted

65. Consider the following statements about Gypsum deposits in Rajasthan:
I. Rajasthan produces over 80% of India's total gypsum output.
II. The Got-Manglod area in Nagaur is a prominent site for gypsum mining.
III. Gypsum is heavily utilized in the manufacturing of Plaster of Paris and Portland cement.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

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66. Identify the odd one out concerning the typical spatial distribution of these minerals in Rajasthan:
(1) Marine Gypsum (Bikaner-Nagaur basin)
(2) Copper (Khetri-Singhana belt)
(3) Iron Ore (Morija-Banol deposits)
(4) Lead-Zinc (Zawar-Mochia mines)
(5) Question not attempted

67. Consider the following statements about the physical and chemical properties of Mica found in Bhilwara and Ajmer:
I. It has excellent basal cleavage, allowing it to be split into very thin, flexible sheets.
II. It is a highly efficient conductor of electricity.
III. It can withstand very high temperatures without significantly degrading.
IV. It is completely soluble in ordinary water.
Which of the above statement(s) is/are correct?
(1) I and III only
(2) II and IV only
(3) I, II and III only
(4) I, III and IV only
(5) Question not attempted

68. The strategic utility of Tungsten extracted from the Degana mines stems directly from which physical effect when alloyed with steel?
(1) It significantly lowers the melting point of the steel for easier industrial casting and molding
(2) It transforms the steel into a highly transparent material suitable for specialized lens crafting
(3) It renders the steel completely magnetic-proof for use in advanced electronic shielding applications
(4) It increases the steel's hardness and resistance to high-temperature wear and structural stress
(5) Question not attempted

69. Consider the following statements regarding the characteristics of Iron Ore in Rajasthan:
I. The deposits are heavily concentrated and are the largest single unbroken iron ore belt in India.
II. Hematite is the most commonly extracted form of iron ore in the Jaipur-Dausa regions.
III. The scattered and limited nature of deposits restricts the establishment of massive integrated steel plants in the state.
IV. Micaceous hematite is found in some southern districts.
V. The overall quality of most deposits is of medium to low grade.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) II and III only
(3) IV and V only
(4) I and V only
(5) Question not attempted

70. Which of the following districts is NOT generally associated with significant commercial production of Granite in Rajasthan?
(1) Jalore
(2) Jaisalmer
(3) Barmer
(4) Sirohi
(5) Question not attempted

71. Read the given statements and select the correct answer from the options provided:
Statement I: The mineral policy emphasizes the creation of employment through minor mineral sectors like dimensional stones (marble, granite, sandstone).
Statement II: The policy mandates the complete nationalization of all dimensional stone quarries, banning private ownership.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

72. Identify the correctly matched pair of the minor copper deposit and its respective district in Rajasthan:
(1) Kho-Dariba — Alwar
(2) Pur-Banera — Jaisalmer
(3) Bhagot-ka-Bas — Bikaner
(4) Bidasar — Udaipur
(5) Question not attempted

73. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Type of Dimensional Stone)
A. White Marble
B. Red Sandstone
C. Yellow Limestone
D. Granite
List II: (Prominent Region)
i. Jalore
ii. Makrana
iii. Dholpur
iv. Jaisalmer
(1) A-ii, B-iii, C-iv, D-i
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-i, C-iv, D-ii
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

74. The headquarters and major historical smelting facilities of Hindustan Copper Limited (HCL) in Rajasthan are situated at which location?
(1) Khetri
(2) Zawar
(3) Debari
(4) Chanderiya
(5) Question not attempted

75. Which of the following statements correctly identifies the historical and metallurgical significance of the Zawar region in Udaipur?
(1) It was the site where the first commercial uranium extraction in the entire Asian continent took place
(2) It served as the primary and sole source of high-quality diamonds for the ancient Mughal Empire
(3) It is the geographical location of the world's largest open-cast coal mine and thermal power plant
(4) It contains the earliest evidence of global zinc distillation, an ASM International

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Historical Landmark
(5) Question not attempted

76. Which of the following options represents the most appropriate long-term solution for tackling the challenges of low-grade mineral ores in Rajasthan?
(1) Imposing heavy import tariffs on all foreign minerals to protect the domestic mining industry
(2) Investing in advanced indigenous mineral beneficiation and specialized metallurgical research
(3) Completely abandoning the extraction and refining of all metallic minerals across the whole state
(4) Shifting the workforce entirely to the extraction of riverbed sand and other minor clay minerals
(5) Question not attempted

77. Identify the incorrectly matched pair regarding the specific mineral and the district it is prominently found in:
(1) Gypsum — Bikaner
(2) Rock Phosphate — Udaipur
(3) Tungsten — Jaisalmer
(4) Limestone — Chittorgarh
(5) Question not attempted

78. The Kawas and Uttarlai regions in the Barmer district are prominently recognized for extensive deposits of which non-metallic mineral?
(1) Mica
(2) Tungsten
(3) Iron Ore
(4) Gypsum
(5) Question not attempted

79. The concept of "sustainable mining" as emphasized in Rajasthan's modern mineral policies fundamentally aims to balance which two major factors?
(1) Economic mineral extraction balanced with comprehensive environmental and ecological restoration
(2) Complete forest clearance to ensure the realization of maximum immediate export-based revenues
(3) Increased utilization of child labor combined with a decreased focus on technological investment
(4) Total prohibition of domestic mineral use with mandatory 100% export of all refined materials
(5) Question not attempted

80. In the context of Rajasthan's polymetallic deposits, silver is systematically recovered as an extremely valuable by-product primarily at which major smelting facilities?
(1) The Khetri Copper Smelter
(2) The Chanderiya and Debari Lead-Zinc Smelters
(3) The Gotan White Cement Plants
(4) The Suratgarh Thermal Power Plants
(5) Question not attempted

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ANSWERS

1. (2) Rajasthan is known as the 'Museum of Minerals' due to its diverse and vast mineral wealth
Rajasthan is often called the 'Museum of Minerals' because it hosts a vast diversity of mineral resources. The state produces about 81 different types of minerals, including both metallic and non-metallic varieties. This geological richness contributes significantly to the national economy, making Rajasthan a critical hub for mining activities and industrial raw materials in India.

2. (1) Both A and R are true and R is the correct explanation of A.
The Degana mines located in the Nagaur district of Rajasthan are recognized as a strategically vital site for tungsten production in India. Rajasthan holds the distinction of possessing the only major workable deposit of tungsten ore, specifically wolframite. This mineral is essential for manufacturing hard steel alloys and defense equipment, justifying its strategic importance to the nation.

3. (3) Statement I is correct but Statement II is incorrect
Rampura-Agucha is globally renowned as one of the world's largest and richest zinc-producing mines. However, geographical records indicate that this major mining operation is located in the Bhilwara district, not Udaipur. While Udaipur is famous for the Zawar mines, Rampura-Agucha remains the primary source of lead and zinc concentrates within the Bhilwara region of Rajasthan.

4. (1) A-iv, B-iii, C-ii, D-i
Lead and zinc are primarily extracted from the Zawar mines in Udaipur. Copper mining is synonymous with the Khetri-Singhana belt in Jhunjhunu. Tungsten is famously produced at the Degana mines in Nagaur district. Iron ore deposits are found at Morija-Banol near Jaipur. These sites represent the most significant industrial locations for the respective minerals within the state of Rajasthan.

5. (3) Gypsum
Classification of minerals separates them into metallic and non-metallic categories. Lead, zinc, and copper are all metallic minerals because they contain metal elements and are processed for metal extraction. In contrast, gypsum is a non-metallic mineral primarily composed of calcium sulfate dihydrate. It is widely used in agriculture and the construction industry rather than for metal production.

6. (1) I and II only
Zawar mines are historically significant for harboring the world's oldest evidence of zinc smelting operations. Rajpura-Dariba is another major lead-zinc mining site located within the Rajsamand district. While Rampura-Agucha is a massive mining center, it is primarily famous for its high-grade lead and zinc deposits, not for iron ore extraction, which makes the third statement scientifically incorrect.

7. (4) Lead and Zinc
Rajasthan does not have independent silver mines of significant scale. Instead, silver is obtained as a highly valuable by-product during the smelting and refining of lead and zinc ores, specifically from galena and sphalerite. Smelting plants in regions like Chanderiya and Debari recover this precious metal while processing concentrates from major mines like Zawar and Rampura-Agucha.

8. (3) I, II and IV only
The Khetri Copper Complex and Singhana mines in Jhunjhunu are central to India's copper production. These deposits are largely found as chalcopyrite ore. While Rajasthan is a leading producer, it does not hold an absolute monopoly, as states like Madhya Pradesh also contribute significantly to copper output. Therefore, statements regarding the location and ore type are factually accurate.

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centers are geographically co-located with lead-zinc smelters in Rajasthan?
(1) Silver acts as a necessary catalyst to chemically melt lead and zinc ores
(2) Silver is naturally alloyed within the galena and sphalerite ores extracted from these mines
(3) Smelting lead and zinc generates extreme cold required to condense silver from the atmosphere
(4) The state government mandates arbitrary co-location to reduce administrative tax burdens
(5) Question not attempted

49. Consider the following statements regarding the overview of Rajasthan's mineral wealth:
I. Rajasthan has the largest number of mining leases in the country.
II. The state is uniquely endowed with extensive deposits of both metallic and non-metallic minerals.
III. Mining is a trivial contributor to the state's Gross Domestic Product (GDP).
IV. The Aravalli mountain range acts as the central structural backbone hosting most of the state's metallic minerals.
V. Non-metallic minerals like gypsum and limestone are dominantly found in the western and peripheral regions.
Which of the above statement(s) is/are correct?
(1) I, II, III and V only
(2) I, II, IV and V only
(3) II, III, IV and V only
(4) I, III, IV and V only
(5) Question not attempted

50. Which of the following locations is NOT recognized as an iron ore mining area in Rajasthan?
(1) Rampura-Agucha
(2) Morija-Banol
(3) Nathra-Ki-Pal
(4) Thur-Hunder
(5) Question not attempted

51. Which of the following represents the correct sequential process of copper extraction utilized at complexes like Khetri?
(1) Mining → Smelting → Crushing → Refining
(2) Mining → Crushing → Smelting → Refining
(3) Smelting → Mining → Refining → Crushing
(4) Crushing → Smelting → Mining → Refining
(5) Question not attempted

52. Read the given statements and select the correct answer from the options provided:
Statement I: Limestone of cement grade acts as the primary calcareous raw material for manufacturing Portland cement.
Statement II: Rajasthan is consistently ranked as one of the lowest producers of cement in India due to a lack of quality limestone.
(1) Both Statement I and Statement II are correct
(2) Both Statement I and Statement II are incorrect
(3) Statement I is correct but Statement II is incorrect
(4) Statement I is incorrect but Statement II is correct
(5) Question not attempted

53. Match the items in List I with those in List II and select the correct answer using the options provided:
List I: (Mineral)
A. Rock Phosphate
B. Gypsum
C. Tungsten
D. Limestone
List II: (Industrial Application/Significance)
i. Soil reclamation and Plaster of Paris
ii. Super Phosphate Fertilizers
iii. Cement Manufacture
iv. High-speed cutting steel and filaments
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

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54. The Pur-Banera and Tiranga hill ranges, which host notable but limited deposits of iron ore, are located in which district of Rajasthan?
(1) Jaipur
(2) Bhilwara
(3) Dausa
(4) Sikar
(5) Question not attempted

district is encountered next. Further south lies Rajpura-Dariba in the Rajsamand district. Finally, the Zawar mines in Udaipur district represent the southernmost location. This sequence follows the latitudinal distribution of major mining centers across the structural framework of the Aravalli range.

19. (1) Both Statement I and Statement II are correct
Bhilwara and Ajmer are the leading districts for mica production in Rajasthan, often referred to as the mica belt. Mica is highly valued for its excellent insulating properties and high thermal resistance. These characteristics make it an indispensable material in the electrical and electronics industry, where it is used to manufacture capacitors, insulators, and other specialized components.

20. (4) Dholpur and Bharatpur
The red and pink sandstone used in historic buildings like the Red Fort and the Parliament House is primarily extracted from Dholpur and Bharatpur districts. This sedimentary rock is prized for its uniform texture, durability, and ease of carving. Rajasthan's sandstone industry provides essential building materials for national monuments, showcasing the state's significant contribution to India's architectural heritage.

21. (1) Both A and R are true and R is the correct explanation of A.
Gypsum mining is of immense agricultural importance because the mineral acts as a vital soil amendment. It is extensively used to reclaim alkaline and saline soils by replacing excess sodium with calcium, which improves soil structure and water infiltration. This process is essential for maintaining soil health and productivity in the agricultural tracts of northern India.

22. (2) Jaipur, Dausa, and Bhilwara districts host the most significant iron ore deposits in the state
Significant iron ore deposits in Rajasthan are concentrated in districts like Jaipur, Dausa, and Bhilwara. Areas such as Morija-Banol and Neemla-Raisela are prominent mining sites. While the state's total reserves are smaller than those in eastern India, these central and south-eastern deposits are crucial for local industries. These ores are primarily hematite and are used for domestic production.

23. (1) A-ii, B-i, C-iv, D-iii
Bikaner is a major producer of gypsum, particularly from the Jamsar region. Rock phosphate is predominantly mined in the Jhamarkotra area of Udaipur. Bhilwara is the primary district for mica production in the state. Chittorgarh is renowned for its vast limestone reserves, which support a large cement industry. These districts represent the principal production hubs for these non-metallic minerals.

24. (1) Chittorgarh
Chittorgarh is an ideal location for cement manufacturing due to its proximity to massive deposits of high-grade limestone. In industrial location theory, weight-losing industries like cement are best situated near the source of heavy raw materials to minimize transportation costs. The abundance of cement-grade limestone in Chittorgarh has made it one of the largest cement-producing hubs.

25. (1) I and II only
Tungsten is a strategic mineral vital for creating hard steel alloys used in defense and heavy industry. The Degana deposit in Nagaur was extensively developed during the World Wars to meet military demands. However, tungsten is not found in massive quantities across all Aravalli districts; its workable deposits are very localized, primarily restricted to Nagaur and Sirohi districts.

26. (3) III only
The Zawar mines in Udaipur are historically famous for ancient zinc distillation and remain operationally significant today. They are managed by Hindustan Zinc Limited and continue to produce substantial quantities of lead and zinc. The claim that these mines are entirely exhausted and have no current significance is factually incorrect, as they remain a core asset in the sector.

27. (2) I, II and IV only
Sandstone is a sedimentary rock famously extracted from Dholpur and Bharatpur for its unique colors and durability. The industry provides significant employment to local communities. While sandstone is sedimentary,

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13. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Southern Rajasthan districts like Dungarpur and Banswara have a higher child sex ratio compared to northern districts like Jhunjhunu and Sikar.
Reason (R): Tribal populations heavily concentrated in southern Rajasthan historically possess more egalitarian social norms regarding the girl child.
Select the correct answer using the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

14. Which of the following is an incorrect pair of a district and its overall sex ratio as per the 2011 Census?
(1) Dungarpur - 994
(2) Rajsamand - 990
(3) Pali - 987
(4) Dholpur - 890
(5) Question not attempted

15. Consider the following statements about family welfare and population policies in Rajasthan:
I. Mukhyamantri Rajshree Yojana aims to improve the child sex ratio and promote girl child education.
II. Janani Suraksha Yojana aims exclusively to provide free higher education to women.
III. The Rajasthan Population Policy targets the stabilization of population by reducing the Total Fertility Rate.
Which of the combinations of the above statements is incorrect?
(1) Only II
(2) Only I
(3) Only III
(4) I and III
(5) Question not attempted

16. In the context of age structure, the dependency ratio in a population is defined as the ratio of:
(1) Ratio of the male population to the total female population in a region.
(2) Persons aged 0-14 and 65 and above to persons aged 15-64.
(3) Ratio of the rural population to the total urban population in a region.
(4) Ratio of the unemployed population to the total available workforce.
(5) Question not attempted

17. Find the odd one out among the following districts based on their population density being less than 100 persons per square kilometer in 2011:
(1) Jaisalmer
(2) Churu
(3) Bikaner
(4) Barmer
(5) Question not attempted

18. Which of the following represents the correct ascending order of districts based on their decadal population growth rate (2001-2011)?
(1) Ganganagar, Jhunjhunu, Pali, Bundi
(2) Jhunjhunu, Ganganagar, Bundi, Pali
(3) Pali, Ganganagar, Jhunjhunu, Bundi
(4) Bundi, Pali, Jhunjhunu, Ganganagar
(5) Question not attempted

19. The demographic dividend in Rajasthan refers to the economic growth potential that can result from:
(1) High dependency ratio due to an increasing elderly population share.
(2) Equalization of the sex ratio across all districts in the state.
(3) Working-age population is larger than the non-working-age share.
(4) Rapid increase in fertility rate ensuring future large generations.
(5) Question not attempted

20. Consider the following statements regarding the religious composition of Rajasthan as per the 2011 Census:
I. Hindus constitute over 88 percent of the total population.
II. Muslims are the second largest religious group in the state.
III. Sikhs constitute more than 5 percent of the state's population.
IV. Jains have the highest literacy rate among all religious groups in the state.

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source of tungsten. The hill has been the site of significant mining activities, especially during periods of high strategic demand, making it a well-known landmark in the history of Rajasthan's metallic extraction.

37. (3) Statement I is correct but Statement II is incorrect
The Khetri Copper Complex was established by the public sector undertaking Hindustan Copper Limited to process local copper ore. While it may occasionally use imported concentrates to supplement production, it was fundamentally designed to process ore from the nearby Khetri and Singhana mines. The assertion that it does not process any local ore is incorrect and factually baseless.

38. (2) Black Marble — Bhainslana (Jaipur)
Bhainslana in Jaipur district is the most famous source for high-quality black marble in Rajasthan. Pink marble is primarily associated with regions like Jalore and Banswara, while Makrana is world-renowned for white marble. Green marble is famously found in Rikhabdev in the Udaipur district. These distinct colors are the result of specific mineral impurities present during the rock's formation.

39. (4) Rajasthan holds near 100% production share in minerals like Lead, Zinc, and Wollastonite
Rajasthan is described as having a monopolistic advantage because it is the sole or dominant producer of certain minerals in India. It accounts for almost 100% of the national production of lead, zinc, and wollastonite. This unique geological endowment makes the state a critical supplier for these minerals, which are essential for various industrial applications ranging from metallurgy to ceramics.

40. (1) Birmania and Fatehgarh
In Jaisalmer district, rock phosphate deposits are found in the Birmania and Fatehgarh areas. These are typically sedimentary deposits. While Jhamarkotra and Maton are the most famous rock phosphate sites in the state, they are located in the Udaipur district. Zawar is associated with lead and zinc, and Morija-Banol is known for iron ore, distinguishing these geographical regions clearly.

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41. (1) Both A and R are true and R is the correct explanation of A.
The mica mining industry in Rajasthan has declined significantly because of the development of synthetic insulating materials and plastics. Historically, natural mica was the preferred insulator for electronics, but these technological advancements have reduced global demand. Consequently, many mines in the Bhilwara and Ajmer belt have seen reduced activity, as the industrial reliance on natural mica has diminished significantly.

42. (1) Granite deposits in Rajasthan are primarily sedimentary formations found solely in the Thar Desert
Granite is an intrusive igneous rock, not a sedimentary one. It forms from the slow cooling of magma beneath the earth's surface and is found across several districts in the Aravalli range and surrounding regions. While it is processed in arid districts like Jalore, its geological origin is igneous. The other statements about its strength, processing industries, and colors are accurate.

43. (1) A-iii, B-i, C-ii, D-iv
Morija-Banol is the most significant iron ore deposit in the Jaipur district. Nathra-Ki-Pal is a well-known iron ore site located in Udaipur. Neemla-Raisela is a prominent mining area in the Dausa district. Chomu-Samod is another region near Jaipur where iron ore deposits are found. These sites together contribute to the state's total production of hematite-grade iron ore deposits.

44. (2) Extreme transparency resembling glass
Dholpur and Bharatpur sandstones are valued for their durability, beautiful colors, and the ease with which they can be carved into intricate designs. However, as a sedimentary rock composed of sand-sized mineral particles, sandstone is opaque and does not possess transparency like glass. Its structural and aesthetic qualities make it a preferred choice for monumental construction rather than any optical purpose.

45. (1) I and II only
Silver in Rajasthan is primarily recovered by Hindustan Zinc Limited during the smelting of lead and zinc concentrates. The state is actually the leading producer of silver in India, contributing nearly the entire national output.

the question requires identifying the correct set of descriptive statements. These regions are essential for supplying building-grade materials used in monumental and residential architecture across the entire country.

28. (2) Jaisalmer
Bhilwara, Ajmer, and Tonk are well-known for their mica deposits, forming the principal mica-producing belt of Rajasthan. Bhilwara is especially famous for its mica-brick manufacturing industry. Jaisalmer, located in the western desert, is primarily known for limestone, gypsum, and hydrocarbons, but does not possess significant commercial mica deposits, making it the odd one out in this context.

29. (2) I, II, IV and V only
Granite is an intrusive igneous rock found in various colors across Rajasthan, including pink, red, and black. Jalore is known as the 'Granite City' due to its massive production capacity. Modern techniques like wire-sawing are used for extraction in Barmer and Sirohi. The industry is diverse and not limited exclusively to black granite, making the third statement incorrect.

30. (4) Sanu area in Jaisalmer is renowned for producing high-grade steel melting shop (SMS) limestone
The Sanu area in Jaisalmer is famous for producing high-grade steel melting shop (SMS) limestone, which is essential for the steel industry. Limestone is actually abundant in several western districts, and it is a non-metallic sedimentary rock, not a metallic ore. Rajasthan is a leading producer of limestone, supplying both its domestic cement industry and other states.

31. (1) Gypsum
The Jamsar mine in Bikaner district is historically one of the largest and most significant gypsum deposits in India. It has been a major source of gypsum for decades, supporting the agricultural sector for soil reclamation and the construction industry for manufacturing plaster and cement. The geological formations in the Bikaner basin facilitate the occurrence of these extensive deposits.

32. (2) It causes severe deforestation, biodiversity loss, and disruption of natural drainage
Unscientific and illegal mining in the Aravalli hills has led to severe environmental degradation. The removal of vegetation and topsoil causes massive deforestation and loss of biodiversity. Furthermore, these operations disrupt natural drainage patterns and increase soil erosion. This ecological damage threatens the hills' role as a natural barrier against desertification and affects the overall environmental stability of regions.

33. (1) A-i, B-ii, C-iii, D-iv
Sanu in Jaisalmer is the primary source for high-grade steel melting shop (SMS) limestone. Gotan in Nagaur is famous for high-purity chemical-grade limestone used in various industrial processes. Nimbahera in Chittorgarh is a major center for cement-grade limestone. The Jaisalmer city region is known for its beautiful yellow decorative limestone, frequently used in local and historical architecture.

34. (1) Complete absence of an established transport infrastructure to move extracted minerals
While the mining sector faces challenges like ecological degradation, occupational health hazards like silicosis, and encroachment into forests, the claim that there is a complete absence of transport infrastructure is false. Rajasthan has an established network of roads and railways specifically developed to facilitate the movement of minerals from major mining hubs to industrial centers across the whole nation.

35. (3) Ensuring occupational health and safety while mitigating diseases like silicosis for workers
A central focus of the Rajasthan Mineral Policy is the welfare of mine workers, particularly ensuring their occupational health and safety. The policy emphasizes mitigating the risks of respiratory diseases like silicosis, which is common in stone carving and mining. It aims to improve working conditions and provide medical support, recognizing the socioeconomic importance of the mining labor force.

36. (4) Rewat Hill
The tungsten deposits in the Degana area of Nagaur district are geographically located on Rewat Hill. This specific geological feature contains wolframite ore, which is the primary

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other states, they form an important part of the local mineral landscape within Rajasthan.

55. (4) Tungsten — Degana (Nagaur)
Degana in Nagaur is the most famous and historically significant site for tungsten in India. Lead-zinc is primarily found in Zawar and Rampura-Agucha, not Makrana. Copper is famously extracted from Khetri, not Jhamarkotra, which is a rock phosphate site. Iron ore is found in areas like Morija-Banol, whereas Sanu in Jaisalmer is renowned for high-grade limestone, making other pairings incorrect.

56. (1) It was the first stone resource in Asia designated as a Global Heritage Stone Resource by IUGS
Makrana marble is a high-quality white metamorphic rock that was the first stone from Asia to receive the Global Heritage Stone Resource designation. This status recognizes its international historical, architectural, and cultural importance. The marble remains an active resource and is pried for premium construction, sculptures, and preserving iconic monuments like the Taj Mahal rather than for industrial fertilizer use.

57. (1) I, II, III
The major lead-zinc deposits of Rajasthan follow a North to South geographical distribution. Rampura-Agucha in the Bhilwara district is the northernmost of the three. Moving south, Rajpura-Dariba is located in the Rajsamand district. The Zawar mines in the Udaipur district represent the southernmost point in this sequence. This alignment reflects the structural trend of the mineralized belts within the state.

58. (1) Phosphatic Fertilizers like SSP and DAP
Rock phosphate is an essential mineral used primarily for the production of phosphatic fertilizers like Single Super Phosphate (SSP) and Diammonium Phosphate (DAP). Given India's large agricultural sector, the extraction of rock phosphate from Udaipur and Jaisalmer is a national priority. These deposits provide the necessary phosphorus content required to improve soil fertility and enhance crop yields across the country.

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59. (4) They are low-grade, sedimentary phosphatic nodules occurring primarily in the Birmania area
The rock phosphate deposits found in the Jaisalmer district, particularly in the Birmania area, are characterized as low-grade sedimentary formations. Unlike the high-grade crystalline deposits found in some other regions, these occur as phosphatic nodules and layers within sedimentary rock sequences. While they are less commercially valuable than the Jhamarkotra deposits, they still represent a significant part of the state's inventory.

60. (2) Its capacity to replace sodium ions with calcium ions, improving soil structure and percolation
Gypsum is used in agriculture to treat "usar" or alkaline soils. Chemically, it provides calcium ions that replace excess sodium ions on the soil particles. This replacement improves the physical structure of the soil, making it more porous and allowing for better water percolation and root growth. This fundamental chemical process is vital for reclaiming unproductive lands in arid regions.

61. (1) Both A and R are true and R is the correct explanation of A.
Beneficiation plants are essential at Jhamarkotra because the raw rock phosphate ore often contains high levels of silica and dolomite. These impurities must be removed to produce a high-grade concentrate suitable for fertilizer manufacturing. By processing the low-grade ore locally, the industry ensures the efficient utilization of the resource and improves the economic viability of the operations in Udaipur.

62. (4) Rajasthan possesses independent, extremely large pure silver mines in the Thar desert
Rajasthan does not have any independent, large-scale pure silver mines. All significant silver production in the state is derived as a by-product during the smelting of lead and zinc ores from mines like Zawar and Rajpura-Dariba. While the state is the top silver producer in India, this production is entirely linked to the processing of polymetallic base metal ores.

63. (1) A-iii, B-i, C-iv, D-ii
Jhamarkotra is the leading site for rock phosphate. Makrana is synonymous with high-

quality white marble. Rampura-Agucha is a world-class source for zinc and lead. Khetri is the heart of copper mining in Rajasthan. These associations are fundamental to understanding the state's economic geography, as each location is a primary national center for its respective mineral, contributing to growth.

64. (2) Sedimentary Rock
Sandstone is a classic example of a sedimentary rock, formed from the accumulation and cementation of sand-sized mineral grains or rock fragments over millions of years. In Rajasthan, extensive sandstone formations in districts like Jodhpur, Bundi, and Dholpur provide a variety of building stones. These rocks are characterized by their layered structure and are widely used in construction due to durability.

65. (4) I, II and III
Rajasthan dominates India's gypsum production, contributing over 80% of the total output. The Got-Manglod area in Nagaur is a well-known mining site for this mineral. Gypsum's industrial utility is vast, serving as a primary component in manufacturing Plaster of Paris and as a retarder in cement production. Its agricultural use for soil reclamation further enhances its economic and strategic significance.

66. (1) Marine Gypsum (Bikaner-Nagaur basin)
Copper, iron ore, and lead-zinc deposits in Rajasthan are primarily found in the Aravalli range and its associated hard-rock geological formations. These are typically metallic minerals formed through igneous or metamorphic processes. In contrast, the gypsum deposits in the Bikaner-Nagaur basin are marine evaporite deposits found in western sedimentary basins, making their geological setting and spatial distribution entirely distinct.

67. (1) I and III only
Mica is renowned for its perfect basal cleavage, which allows it to be split into extremely thin, flexible sheets. It also has high thermal stability, enabling it to withstand high temperatures. However, it is an excellent electrical insulator, not a conductor, which is why it is used in electronics. Additionally, mica is chemically inert and insoluble in water, making other statements incorrect.

68. (4) It increases the steel's hardness and resistance to high-temperature wear and structural stress
The strategic value of tungsten lies in its incredible hardness and high melting point. When alloyed with steel, it creates "high-speed steel" that retains its hardness and structural integrity even at very high temperatures. This property is crucial for manufacturing cutting tools, drill bits, and specialized military equipment that must endure extreme heat and friction without failure, justifying the mineral's strategic importance.

69. (1) I only
Iron ore deposits in Rajasthan are actually scattered and relatively small compared to the massive, unbroken belts found in states like Odisha. This fragmented nature is a primary reason why the state lacks large integrated steel plants. While hematite is the main ore and the quality is generally medium-grade, the claim that Rajasthan has the largest unbroken iron ore belt is false.

70. (2) Jaisalmer
Jalore, Barmer, and Sirohi are all major centers for commercial granite production in Rajasthan, with Jalore being the most famous. Jaisalmer, however, is better known for its vast deposits of yellow limestone, sandstone, and gypsum. While some granite may exist in the region, Jaisalmer is not categorized as a significant commercial hub for granite production compared to the mentioned districts.

71. (3) Statement I is correct but Statement II is incorrect
The Rajasthan Mineral Policy recognizes the dimensional stone sector as a major source of local employment and economic growth. However, the policy does not mandate the nationalization of these quarries. Instead, it encourages private sector investment and participation through a regulated leasing system, aiming to modernize the industry while maintaining a competitive and diverse market for these valuable stone resources.

72. (1) Kho-Dariba — Alwar
Kho-Dariba is a well-known copper mining area located in the Alwar district. In contrast, the Pur-Banera belt is in Bhilwara, and Bidasar is located in the Churu district. Bhagot-ka-Bas is situated in Sikar. These smaller deposits supplement the major production from the Khetri belt,

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highlighting the widespread but localized occurrence of copper mineralization across different geological terrains in Rajasthan.

73. (1) A-ii, B-iii, C-iv, D-i
White marble is the signature product of Makrana. Red sandstone is famously extracted from the Dholpur region for monumental buildings. Yellow limestone is the characteristic building stone of Jaisalmer, often seen in its historic fort and architecture. Jalore is the primary center for the granite industry. These regional associations define the visual character of Rajasthan's diverse and world-renowned industry.

74. (1) Khetri
The Khetri Copper Complex in Jhunjhunu is the primary site for Hindustan Copper Limited (HCL) in Rajasthan. It houses the major mining operations, concentration plants, and smelting facilities for copper. While other locations like Zawar and Debari are important for lead and zinc, Khetri remains the historical and administrative heart of the public sector's copper production efforts within the state.

75. (4) It contains the earliest evidence of global zinc distillation, an ASM International Historical Landmark
The Zawar region is internationally recognized for its ancient metallurgical heritage. It contains the earliest known evidence of zinc distillation on a commercial scale, dating back several centuries. This achievement has been designated as an International Historical Landmark by ASM International. This historical significance highlights Rajasthan's long-standing tradition of advanced mineral processing, long before the advent of modern industrial mining techniques.

76. (2) Investing in advanced indigenous mineral beneficiation and specialized metallurgical research
As high-grade mineral reserves are depleted, the long-term sustainability of Rajasthan's mining sector depends on using low-grade ores. Investing in advanced mineral beneficiation and metallurgical research is the most appropriate solution. This allows for the efficient removal of impurities and the upgrading of ore quality, ensuring that the state's vast but low-grade resources can be utilized effectively for industry.

77. (3) Tungsten — Jaisalmer
Tungsten is primarily found in the Nagaur (Degana) and Sirohi districts of Rajasthan. Jaisalmer is not associated with tungsten; it is famous for limestone, sandstone, and hydrocarbons. Gypsum is correctly matched with Bikaner, rock phosphate with Udaipur (Jhamarkotra), and limestone with Chittorgarh, which is the hub of the state's cement industry. Identifying these regional concentrations is key to understanding geology.

78. (4) Gypsum
The Kawas and Uttarlai regions in the Barmer district are well-known for their extensive gypsum deposits. These areas, along with other sites in Bikaner and Nagaur, form the core of Rajasthan's gypsum-producing landscape. The gypsum found here is utilized in various sectors, ranging from the manufacture of cement and plaster to its vital role in improving the quality of soil.

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79. (1) Economic mineral extraction balanced with comprehensive environmental and ecological restoration
Sustainable mining as promoted in modern policy aims to balance the economic benefits of mineral extraction with the necessity of environmental protection. It involves implementing zero-waste mining techniques, mandatory land reclamation, and minimizing the ecological footprint of mining activities. This approach ensures that mineral resources contribute to current economic growth without compromising the environmental health and resource availability for future generations.

80. (2) The Chanderiya and Debari Lead-Zinc Smelters
Silver is systematically recovered as a by-product during the smelting of lead and zinc at the Chanderiya and Debari facilities. These plants, operated by Hindustan Zinc Limited, use advanced metallurgical processes to separate precious metals from base metal concentrates. Because silver is naturally present in the ores from Zawar and Rampura-Agucha, these smelters are the primary sites for national production.

CHAPTER 26

Population : Growth, Density, Literacy and Sex Ratio

1. According to the Census of India 2011, what is the exact recorded total population of Rajasthan?
(1) 5,65,07,188
(2) 6,85,48,437
(3) 7,24,56,821
(4) 7,85,34,312
(5) Question not attempted

2. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): Rajasthan recorded a negative decadal population growth rate during the 1911-1921 decade.
Reason (R): The 1911-1921 period witnessed severe famines and the devastating influenza epidemic which caused high mortality.
Select the correct answer using the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

3. Which of the following statements correctly compares the overall sex ratio of Rajasthan with the national average as per the 2011 Census?
(1) Rajasthan's sex ratio is 943, which is equal to the national average.
(2) Rajasthan's sex ratio is 928, which is higher than the national average of 919.
(3) Rajasthan's sex ratio is 928, which is lower than the national average of 943.
(4) Rajasthan's sex ratio is 919, which is lower than the national average of 928.
(5) Question not attempted

4. Match the districts in List I with their population density in 2011 in List II:
List I: (Districts)
A. Jaipur
B. Bharatpur
C. Dausa
D. Alwar
List II: (Population Density 2011)
i. 438
ii. 476
iii. 503
iv. 595
Codes:
(1) A-iv, B-iii, C-ii, D-i
(2) A-iv, B-ii, C-iii, D-i
(3) A-iii, B-iv, C-i, D-ii
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

5. Identify the incorrect statement regarding the literacy rates in Rajasthan according to the 2011 Census.
(1) The overall literacy rate of the state recorded in 2011 is 66.1 percent.
(2) The male literacy rate for the entire state stands at 79.2 percent.
(3) The female literacy rate is 75.4 percent, matching the male literacy rate.
(4) There is a significant gender gap of over 25 percentage points in literacy rates.
(5) Question not attempted

6. Consider the following statements regarding the literacy gap in Rajasthan:
I. Kota district has the highest female literacy rate in the state.
II. Jhunjhunu district holds the highest male literacy rate.
III. Jalore district recorded the lowest overall literacy rate as well as the lowest female literacy rate.
Which of the combinations of the above statements is correct?

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(1) I and II only
(2) I, II, and III
(3) II and III only
(4) I and III only
(5) Question not attempted

7. Which among the following is the primary demographic reason for the exceptionally high population growth rate in Rajasthan between 1971 and 1981?
(1) A sudden increase in the birth rate combined with high in-migration levels.
(2) A massive influx of refugees following the partition of India into two nations.
(3) The introduction of family planning policies which initially failed to succeed.
(4) Rapidly declining death rates with high birth rates due to medical advances.
(5) Question not attempted

8. Arrange the following districts of Rajasthan in descending order of their population density as per the 2011 Census:
A. Alwar
B. Bharatpur
C. Dausa
D. Jaipur
Select the correct order from the options given below:
(1) D, B, C, A
(2) D, C, B, A
(3) B, D, A, C
(4) A, C, B, D
(5) Question not attempted

9. Consider the following statements regarding the distribution of Scheduled Castes and Scheduled Tribes in Rajasthan:
I. Scheduled Castes constitute approximately 17.8 percent of the total population.
II. Scheduled Tribes constitute approximately 13.5 percent of the total population.
III. Banswara has the highest percentage of Scheduled Tribe population in the state.
IV. Ganganagar has the highest percentage of Scheduled Caste population in the state.
Which of the combinations of the above statements is correct?
(1) I, II, and III only
(2) II, III, and IV only
(3) I, II, III, and IV
(4) I, III, and IV only
(5) Question not attempted

10. What was the decadal population growth rate of Rajasthan during the period 2001-2011?
(1) 21.3 percent
(2) 17.7 percent
(3) 28.4 percent
(4) 32.5 percent
(5) Question not attempted

11. Consider the following statements concerning the census history of Rajasthan from 1901 to 2011:
I. The population of Rajasthan in 1901 was approximately 1.03 crore.
II. The highest decadal growth rate was recorded in the 1971-1981 decade.
III. The population crossed the 5 crore mark in the 2001 census.
IV. The decadal growth rate declined continuously after the 1981 census.
V. The 1911-1921 decade is recognized as the demographic divide in the state's history.
Which of the combinations of the above statements is correct?
(1) I, II, III, and V only
(2) II, III, IV, and V only
(3) I, II, IV, and V only
(4) I, II, III, IV, and V
(5) Question not attempted

12. Match the districts in List I with their lowest literacy rates in 2011 in List II:
List I: (Districts)
A. Jalore
B. Sirohi
C. Pratapgarh
D. Banswara
List II: (Lowest Literacy Rates 2011)
i. 55.3%
ii. 56.0%
iii. 54.9%
iv. 56.3%
Codes:
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

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The statement claiming Rajasthan produces less than 1% of India's silver is factually incorrect, as the state holds a near-monopoly on domestic production.

46. (4) Copper
Gypsum, rock phosphate, and limestone are all minerals that predominantly occur in sedimentary formations in Rajasthan. They are formed through processes like evaporation or organic accumulation in ancient marine environments. Copper, however, occurs as a metallic ore in hydrothermal veins or as part of metamorphic and igneous rock structures, making its geological mode of occurrence distinct from these non-metallic minerals.

47. (3) IV only
The mining sector in Rajasthan faces several challenges, including the need for beneficiation of low-grade ores, strict environmental regulations, and the problem of illegal mining. However, the claim that there is absolutely no resistance regarding land acquisition is incorrect. Mining often involves complex negotiations with local communities over land rights, compensation, and environmental impact, leading to occasional conflicts and legal issues.

48. (2) Silver is naturally alloyed within the galena and sphalerite ores extracted from these mines
Silver production centers are co-located with lead-zinc smelters because silver naturally occurs within the galena (lead ore) and sphalerite (zinc ore) extracted from mines. During the metallurgical processes of smelting and refining these base metals, silver is chemically separated and recovered as a valuable by-product. Therefore, the geography of silver production is entirely dependent on lead-zinc processing facilities.

49. (2) I, II, IV and V only
Rajasthan is a mineral-rich state with the highest number of mining leases and significant deposits of metallic minerals in the Aravallis and non-metallic minerals in the western plains. Statement III is incorrect because mining is actually a major contributor to the state's Gross Domestic Product. The other statements accurately describe the structural distribution and diversity of the state's vast wealth.

50. (1) Rampura-Agucha
Rampura-Agucha is a world-class deposit for lead and zinc, not iron ore. In contrast, Morija-Banol, Nathra-Ki-Pal, and Thur-Hunder are all recognized sites for iron ore mining in Rajasthan. Morija-Banol is near Jaipur, while Nathra-Ki-Pal and Thur-Hunder are located in the Udaipur district. Distinguishing between these major mining hubs is essential for understanding the distribution of metallic minerals.

51. (2) Mining → Crushing → Smelting → Refining
The extraction of copper involves a logical sequence of industrial processes. First, the ore is extracted through mining. It is then crushed and concentrated to increase the metal content. This concentrate is subjected to smelting to melt the metal and remove initial impurities. Finally, refining processes like electrolysis produce high-purity copper cathodes suitable for various industrial and electrical applications.

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52. (3) Statement I is correct but Statement II is incorrect
Cement-grade limestone is the essential calcareous raw material used in the production of Portland cement. Rajasthan is actually one of the leading producers of cement in India, not the lowest, thanks to its vast reserves of high-quality limestone in districts like Chittorgarh and Nagaur. The availability of these resources has led to the establishment of numerous large-scale manufacturing plants.

53. (1) A-ii, B-i, C-iv, D-iii
Rock phosphate is the primary raw material for manufacturing superphosphate fertilizers. Gypsum is used for reclaiming saline soils and producing Plaster of Paris. Tungsten is essential for making high-speed cutting steel and electrical filaments due to its high melting point. Limestone is the most critical component in cement manufacture. These applications highlight the diverse industrial utility of Rajasthan's minerals.

54. (2) Bhilwara
The Pur-Banera and Tiranga hill ranges are located in the Bhilwara district. This region is known for hosting polymetallic deposits, including notable but limited reserves of iron ore alongside lead, zinc, and copper. While the iron ore deposits here are not as massive as those in

Which of the above statements are correct?
(1) I, II, and III only
(2) II, III, and IV only
(3) I, III, and IV only
(4) I, II, and IV only
(5) Question not attempted

21. Which district of Rajasthan recorded the highest total population in the 2011 Census?
(1) Jodhpur
(2) Alwar
(3) Jaipur
(4) Nagaur
(5) Question not attempted

22. Match the districts in List I with their decadal growth rates for 2001-2011 in List II:
List I: (Districts)
A. Barmer
B. Jaisalmer
C. Jodhpur
D. Banswara
List II: (Decadal Growth Rate 2001-2011)
i. 31.8%
ii. 26.5%
iii. 27.7%
iv. 32.5%
Codes:
(1) A-iv, B-i, C-iii, D-ii
(2) A-i, B-iv, C-ii, D-iii
(3) A-iv, B-iii, C-i, D-ii
(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

23. What is the population density of Jaisalmer district as per the 2011 Census?
(1) 78 persons per sq. km
(2) 92 persons per sq. km
(3) 147 persons per sq. km
(4) 17 persons per sq. km
(5) Question not attempted

24. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): The gap between male and female literacy rates in Rajasthan is among the highest in India.
Reason (R): Strong patriarchal social norms, early marriages, and poor accessibility to schools in remote rural areas heavily hinder female education.
Select the correct answer using the codes given below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

25. Consider the following statements regarding the rural and urban population distribution in Rajasthan:
I. The rural population of Rajasthan is 75.1 percent.
II. The urban population of Rajasthan is 24.9 percent.
III. Kota is the most urbanized district in percentage terms.
IV. Dungarpur has the highest percentage of rural population in the state.
V. The urban decadal growth rate was higher than the rural decadal growth rate during 2001-2011.
Which of the combinations of the above statements is correct?
(1) I, II, III, and V only
(2) I, III, IV, and V only
(3) I, II, III, IV, and V
(4) II, III, IV, and V only
(5) Question not attempted

26. In the Indian Census, the child sex ratio is calculated for which specific age group?
(1) 0 to 4 years
(2) 0 to 6 years
(3) 1 to 5 years
(4) 0 to 8 years
(5) Question not attempted

27. Arrange the following districts in descending order based on their female literacy rate in 2011:
A. Ganganagar
B. Jaipur
C. Jhunjhunu
D. Kota
Select the correct order from the options given below:
(1) D, C, B, A
(2) B, D, A, C
(3) C, D, B, A

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(4) D, B, C, A
(5) Question not attempted

28. High male out-migration for employment from districts like Dungarpur and Rajsamand primarily leads to which of the following demographic effects in these districts?
(1) A sudden increase in the total fertility rate.
(2) A higher overall sex ratio favoring females.
(3) A heavily skewed and very low overall sex ratio.
(4) A sharp decline in the overall literacy rate.
(5) Question not attempted

29. Identify the incorrect statement regarding the demographic distribution of social groups in Rajasthan.
(1) The proportion of the Scheduled Caste population is highest in Ganganagar district.
(2) The proportion of the Scheduled Tribe population is lowest in Bikaner and Nagaur districts.
(3) Bikaner district has the highest proportion of the Scheduled Tribe population in the state.
(4) Dungarpur has the lowest proportion of the Scheduled Caste population.
(5) Question not attempted

30. Consider the following statements about Rajasthan's population density factors:
I. Availability of water resources naturally increases population density in eastern Rajasthan.
II. Harsh climatic conditions and sand dunes result in very low population density in western Rajasthan.
III. The demographic divide year for Rajasthan is universally considered to be 1951.
Which of the above statement(s) is/are incorrect?
(1) Only I and II
(2) Only I
(3) I, II, and III
(4) Only III
(5) Question not attempted

31. Match the districts in List I with their child sex ratio in 2011 in List II:
List I: (Districts)
A. Banswara
B. Pratapgarh
C. Bhilwara
D. Udaipur
List II: (Child Sex Ratio 2011)
i. 924
ii. 928
iii. 933
iv. 934
Codes:
(1) A-iv, B-iii, C-ii, D-i
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-ii, C-iii, D-i
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

32. Which district of Rajasthan recorded the lowest decadal population growth rate during 2001-2011?
(1) Jhunjhunu
(2) Ganganagar
(3) Pali
(4) Bundi
(5) Question not attempted

33. Consider the following statements regarding the Population Policy of Rajasthan:
I. Rajasthan introduced its first state population policy in the year 2000.
II. It aims to stabilize the population primarily by reducing the Total Fertility Rate to replacement levels.
III. Family planning programs in the state have completely eradicated the gender gap in literacy.
IV. The policy emphasizes improving reproductive and child health services.
Which of the above statement(s) is/are incorrect?
(1) I and II
(2) Only III
(3) III and IV
(4) II and IV
(5) Question not attempted

34. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R):
Assertion (A): The western districts of Rajasthan possess a significantly lower population density compared to the eastern districts.
Reason (R): The western region is characterized by the vast Thar Desert, arid climate, and acute scarcity of water resources.
Select the correct answer using the codes given

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below:
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

35. Which of the following districts does NOT have a population density above 400 persons per square kilometer as per the 2011 Census?
(1) Jaipur
(2) Bharatpur
(3) Jodhpur
(4) Dausa
(5) Question not attempted

36. Which of the following represents the correct descending order of districts based on their total population in 2011?
(1) Jodhpur, Jaipur, Nagaur, Alwar
(2) Jaipur, Alwar, Jodhpur, Nagaur
(3) Alwar, Jaipur, Jodhpur, Nagaur
(4) Jaipur, Jodhpur, Alwar, Nagaur
(5) Question not attempted

37. Given below are two statements:
Statement I: Rajasthan currently has a relatively young age structure with a large proportion of its population in the working-age group.
Statement II: This demographic setup guarantees automatic and unconditional economic prosperity for the state without any need for skill development.
Which of the following is correct?
(1) Both Statement I and Statement II are true.
(2) Both Statement I and Statement II are false.
(3) Statement I is true but Statement II is false.
(4) Statement I is false but Statement II is true.
(5) Question not attempted

38. Which of the following correctly pairs a demographic indicator with its value for Rajasthan in the 2011 Census?
(1) Overall Literacy Rate - 73.0%
(2) Male Literacy Rate - 79.2%
(3) Child Sex Ratio - 919
(4) Population Density - 382
(5) Question not attempted

39. Consider the following statements about sex ratio facts in Rajasthan:
I. The overall sex ratio of Rajasthan increased from 921 in 2001 to 928 in 2011.
II. The rural sex ratio (933) is higher than the urban sex ratio (914).
III. The child sex ratio declined from 909 in 2001 to 888 in 2011.
IV. Dholpur has the lowest overall sex ratio in the state.
V. Dungarpur is the only district with a sex ratio exceeding 1000.
Which of the combinations of the above statements is incorrect?
(1) Only I and II
(2) Only III and IV
(3) I, II, and V
(4) Only V
(5) Question not attempted

40. According to the 2011 Census, what is the rural sex ratio of Rajasthan?
(1) 933
(2) 914
(3) 928
(4) 943
(5) Question not attempted

41. Match the districts in List I with their lowest sex ratios in 2011 in List II:
List I: (Districts)
A. Dholpur
B. Jaisalmer
C. Karauli
D. Bharatpur
List II: (Lowest Sex Ratios 2011)
i. 852
ii. 861
iii. 846
iv. 880
Codes:
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

42. Which district recorded the highest female literacy rate in Rajasthan in 2011?
(1) Kota
(2) Jaipur

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population density below 100.
(4) Density difference between India and Rajasthan is 182 persons per sq km.
(5) Question not attempted

76. What is the absolute difference between the population density of India and Rajasthan as per the 2011 Census?
(1) 152 persons per sq km
(2) 182 persons per sq km
(3) 200 persons per sq km
(4) 225 persons per sq km
(5) Question not attempted

77. Given below are two statements:
Statement I: The Total Fertility Rate (TFR) of Rajasthan has been continuously declining over the last two decades.
Statement II: Enhanced female literacy, delayed marriages, and family planning awareness have contributed to this decline.
Which of the following is correct?
(1) Both Statement I and Statement II are true.
(2) Both Statement I and Statement II are false.
(3) Statement I is true but Statement II is false.
(4) Statement I is false but Statement II is true.
(5) Question not attempted

78. Identify the correct pair matching the district with its overall literacy rate as per the 2011 Census.
(1) Kota - 74.1%
(2) Jhunjhunu - 76.6%
(3) Sikar - 79.2%
(4) Jaipur - 75.5%
(5) Question not attempted

79. Find the odd one out among the following districts based on their overall sex ratio being below 900 in 2011:
(1) Dungarpur
(2) Dholpur
(3) Jaisalmer
(4) Karauli
(5) Question not attempted

80. Approximately what percentage of India's total population resided in Rajasthan as per the 2011 Census?
(1) 4.25 percent
(2) 5.66 percent
(3) 6.85 percent
(4) 7.15 percent
(5) Question not attempted

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(3) A-iii, B-iv, C-i, D-ii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

50. The year recognized as the "Demographic Divide" in Rajasthan's census history is:
(1) 1911
(2) 1921
(3) 1951
(4) 1981
(5) Question not attempted

51. Which of the following districts recorded the lowest child sex ratio in Rajasthan according to the 2011 Census?
(1) Sikar
(2) Dholpur
(3) Jhunjhunu
(4) Karauli
(5) Question not attempted

52. Based on recent decadal growth trends, Rajasthan is currently transitioning through which phase of the demographic transition model?
(1) High birth rate and high death rate leading to stagnant growth.
(2) High birth rate and rapidly falling death rate leading to explosive growth.
(3) Low birth rate and low death rate resulting in zero population growth.
(4) Declining fertility and mortality rates leading to slowing population growth.
(5) Question not attempted

53. Consider the following demographic indicators comparing India and Rajasthan as per the 2011 Census:
I. Rajasthan's decadal growth rate (21.3%) is higher than India's (17.7%).
II. Rajasthan's population density (200) is lower than India's (382).
III. Rajasthan's overall literacy (66.1%) is lower than India's (73.0%).
IV. Rajasthan's sex ratio (928) is lower than India's (943).
V. Rajasthan's child sex ratio (888) is lower than India's (919).
Which of the combinations of the above statements is correct?
(1) I, II, and III only
(2) II, IV, and V only
(3) I, II, III, IV, and V
(4) I, III, IV, and V only
(5) Question not attempted

54. What is the approximate percentage of the Scheduled Tribe (ST) population in Rajasthan as per the 2011 Census?
(1) 9.5 percent
(2) 13.5 percent
(3) 17.8 percent
(4) 21.2 percent
(5) Question not attempted

55. Given below are two statements:
Statement I: The working-age population percentage is gradually increasing in Rajasthan.
Statement II: This shift naturally reduces the overall demographic dependency ratio.
Which of the following is correct?
(1) Both Statement I and Statement II are true.
(2) Both Statement I and Statement II are false.
(3) Statement I is true but Statement II is false.
(4) Statement I is false but Statement II is true.
(5) Question not attempted

56. Identify the correct pair of districts that have a population density exceeding 500 persons per square kilometer in Rajasthan.
(1) Jaipur and Bharatpur
(2) Jaipur and Dausa
(3) Bharatpur and Alwar
(4) Alwar and Dausa
(5) Question not attempted

57. Match the decades in List I with their decadal growth rates in Rajasthan in List II:
List I: (Decade)
A. 1911-1921
B. 1971-1981
C. 1991-2001
D. 2001-2011
List II: (Decadal Growth Rate in Rajasthan)
i. 32.97%
ii. -6.29%
iii. 21.31%
iv. 28.41%
Codes:
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii

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9. (3) I, II, III, and IV
The social composition of Rajasthan involves significant populations of Scheduled Castes and Scheduled Tribes, constituting approximately eighteen and fourteen percent respectively. Ganganagar has the highest concentration of Scheduled Caste residents, while Banswara is noted for the highest percentage of Scheduled Tribe population. These figures are essential for understanding the demographic diversity and administrative requirements for social welfare programs.

10. (1) 21.3 percent
During the decade spanning 2001 to 2011, Rajasthan's population continued to expand, though at a slightly slower pace than in previous intervals. The recorded decadal growth rate for this period was twenty-one point three percent. This percentage remains higher than the national average, indicating that the state is still undergoing significant demographic expansion despite various ongoing family welfare programs.

11. (4) I, II, III, IV, and V
Since 1901, Rajasthan has seen profound demographic changes. The population initially stood at approximately one crore and eventually surpassed five crore by 2001. Key milestones include the demographic divide in 1921 and the peak growth rate during the 1970s. After 1981, the growth rate began a consistent decline, reflecting the long-term impact of literacy and various population stabilization efforts.

12. (1) A-iii, B-i, C-ii, D-iv
Literacy rates in certain districts of Rajasthan remained notably low in 2011, particularly in southern and western areas. Jalore recorded the lowest percentage at fifty-four point nine, while Sirohi followed with fifty-five point three. Pratapgarh and Banswara also showed low literacy figures, specifically fifty-six and fifty-six point three percent respectively, highlighting the regional educational challenges faced by these districts.

13. (1) Both A and R are true and R is the correct explanation of A.
Southern districts like Dungarpur and Banswara exhibit higher child sex ratios compared to northern regions. This demographic pattern is largely attributed to the cultural practices of the tribal populations residing there. These communities traditionally maintain more egalitarian social norms regarding female children, resulting in better survival and care for girls, which contrasts with the more skewed ratios in northern areas.

14. (4) Dholpur - 890
The overall sex ratio in Rajasthan varies by district, with some areas approaching parity while others remain skewed. Dungarpur, Rajsamand, and Pali are among the districts with the highest ratios, all exceeding nine hundred eighty. However, Dholpur consistently records the lowest sex ratio in the state, with a figure significantly below eight hundred ninety, specifically eight hundred forty-six in 2011.

15. (1) Only II
Rajasthan implements several welfare policies to address demographic and social issues. While the Mukhyamantri Rajshree Yojana focuses on the girl child and the population policy aims for stabilization, the Janani Suraksha Yojana is primarily a maternal health intervention. It promotes institutional deliveries to reduce maternal and infant mortality rather than focusing on providing free higher education to women participants.

16. (2) Persons aged 0-14 and 65 and above to persons aged 15-64.
In demographic studies, the dependency ratio is a vital measure of the economic burden on the productive population. It is calculated by comparing the number of individuals in the non-working age groups, specifically children under fifteen and seniors aged sixty-five and over, against those in the working-age bracket of fifteen to sixty-four. This ratio helps in assessing social security needs.

17. (2) Churu
Several western districts in Rajasthan are characterized by extremely low population densities due to the arid Thar Desert environment. Jaisalmer, Bikaner, and Barmer all have densities below one hundred persons per square kilometer. Churu, however, does not belong to this specific group, as its recorded population density in the

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66. What is the approximate percentage of the Scheduled Caste (SC) population in Rajasthan as per the 2011 Census?
(1) 17.8 percent
(2) 15.2 percent
(3) 20.1 percent
(4) 22.4 percent
(5) Question not attempted

67. Find the odd one out among the following districts, based on their decadal growth rate being below the state average of 21.3 percent:
(1) Ganganagar
(2) Jhunjhunu
(3) Barmer
(4) Pali
(5) Question not attempted

68. Which pair of districts share the lowest male literacy rate (69.5%) in Rajasthan?
(1) Jalore and Sirohi
(2) Barmer and Jaisalmer
(3) Dungarpur and Banswara
(4) Pratapgarh and Banswara
(5) Question not attempted

69. Given below are two statements:
Statement I: Urban literacy in Rajasthan is considerably higher than rural literacy.
Statement II: The gender gap in literacy is notably wider in rural areas compared to urban areas.
Which of the following is correct?
(1) Both Statement I and Statement II are true.
(2) Both Statement I and Statement II are false.
(3) Statement I is true but Statement II is false.
(4) Statement I is false but Statement II is true.
(5) Question not attempted

70. The Janani Suraksha Yojana in Rajasthan is a family welfare intervention most appropriately designed to target which of the following?
(1) Elimination of the practice of child marriage in all rural areas.
(2) Promotion of institutional deliveries to reduce mortality rates.
(3) Provision of universal free secondary education for all girl students.
(4) Nutritional support targeted exclusively for the elderly population.
(5) Question not attempted

71. Which two districts of Rajasthan have the lowest percentage of Scheduled Tribe (ST) population (approximately 0.3%)?
(1) Churu and Hanumangarh
(2) Jodhpur and Jaisalmer
(3) Ganganagar and Bikaner
(4) Bikaner and Nagaur
(5) Question not attempted

72. Which of the following is NOT a demographic trend observed in Rajasthan between the 2001 and 2011 censuses?
(1) A significant increase in the child sex ratio (0-6 years).
(2) A decline in the decadal population growth rate.
(3) An increase in the overall literacy rate.
(4) A slight improvement in the overall sex ratio.
(5) Question not attempted

73. Identify the incorrect statement regarding the rural and urban child sex ratio in Rajasthan (2011 Census).
(1) The rural child sex ratio is higher than the urban child sex ratio.
(2) The urban child sex ratio stands at 874.
(3) The urban child sex ratio is higher than the rural child sex ratio.
(4) The rural child sex ratio stands at 892.
(5) Question not attempted

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74. As the current demographic dividend phase eventually passes over the next few decades, Rajasthan will predominantly face the economic and social challenge of:
(1) An ageing population and a higher old-age dependency ratio.
(2) A sudden explosion in the birth rate.
(3) An unprecedented drop in life expectancy.
(4) A total collapse of the urban infrastructure due to a rising child population.
(5) Question not attempted

75. Identify the correct statement regarding Rajasthan's population density.
(1) The population density of Rajasthan is higher than the national average.
(2) Jaipur is the only district with a population density above 500 persons.
(3) More than five districts have a recorded

(3) Jhunjhunu
(4) Sikar
(5) Question not attempted

43. Identify the incorrect statement regarding the historical population growth of Rajasthan.
(1) The 1911-1921 decade experienced negative growth due to epidemics.
(2) The 1971-1981 decade recorded the highest ever decadal growth rate.
(3) The population of the state more than tripled between 1951 and 2011.
(4) Since 1981, there has been a continuous increase in the decadal growth rate.
(5) Question not attempted

44. Consider the following statements regarding the social composition of Rajasthan:
I. The Scheduled Caste population in Rajasthan is approximately 1.22 crore.
II. The Scheduled Tribe population is approximately 92 lakh.
III. The percentage of the SC population is lower than the ST population in the state.
Which of the combinations of the above statements is correct?
(1) II and III only
(2) I and II only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

45. Find the odd one out among the following districts concerning their total population exceeding 30 lakhs in 2011:
(1) Jaipur
(2) Jodhpur
(3) Jaisalmer
(4) Alwar
(5) Question not attempted

46. The rapidly declining child sex ratio in traditionally prosperous and highly literate districts like Jhunjhunu and Sikar is most commonly attributed to:
(1) Higher infant mortality rates among male children due to health issues.
(2) Massive out-migration of male children for higher education purposes.
(3) A natural biological shift in birth patterns within the Shekhawati area.
(4) Son preference coupled with easy access to illegal abortion technologies.
(5) Question not attempted

47. Given below are two statements:
Statement I: Ganganagar has the highest percentage of Scheduled Caste population in Rajasthan.
Statement II: Dungarpur has the lowest percentage of Scheduled Caste population in the state.
Which of the following is correct?
(1) Both Statement I and Statement II are true.
(2) Both Statement I and Statement II are false.
(3) Statement I is true but Statement II is false.
(4) Statement I is false but Statement II is true.
(5) Question not attempted

48. Consider the following statements regarding female literacy trends in Rajasthan:
I. Female literacy improved significantly between 2001 and 2011 compared to previous decades.
II. Despite improvements, Rajasthan has one of the lowest female literacy rates in India.
III. Rural female literacy in Rajasthan is higher than urban female literacy.
IV. Jalore district recorded a female literacy rate below 40 percent in 2011.
Which of the above statements are correct?
(1) I, II, and III only
(2) I, II, and IV only
(3) II, III, and IV only
(4) I, III, and IV only
(5) Question not attempted

49. Match the literacy parameters in List I with their corresponding districts in List II:
List I: (Literacy Parameters)
A. Highest overall literacy
B. Lowest overall literacy
C. Highest male literacy
D. Lowest male literacy
List II: (Corresponding District)
i. Jhunjhunu
ii. Jalore
iii. Kota
iv. Pratapgarh
Codes:
(1) A-iii, B-ii, C-i, D-iv
(2) A-i, B-ii, C-iii, D-iv

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ANSWERS

1. (2) 6,85,48,437
The 2011 Census provides a detailed demographic profile of Rajasthan, indicating that the state's total population reached over six crore eighty-five lakh. This official figure highlights the significant population growth experienced in the region over previous decades, contributing significantly to India's overall demographic landscape and influencing state-level resource allocation and socio-economic planning for various departments.

2. (1) Both A and R are true and R is the correct explanation of A.
Between 1911 and 1921, Rajasthan experienced a rare negative population growth rate. This demographic decline resulted directly from external environmental and health crises, specifically devastating famines and the widespread influenza epidemic. These factors led to exceptionally high mortality rates across the region, making this decade unique in the state's recorded census history for its population shrinkage.

3. (3) Rajasthan's sex ratio is 928, which is lower than the national average of 943.
According to the 2011 Census, Rajasthan has an overall sex ratio of nine hundred twenty-eight females for every one thousand males. When compared to the national demographic data, this figure is notably lower than the Indian average of nine hundred forty-three. Such statistics highlight the continuing gender imbalance within the state despite various government-led social initiatives and improvements.

4. (1) A-iv, B-iii, C-ii, D-i
The population density across Rajasthan varies significantly by district based on geographical and economic factors. In 2011, Jaipur recorded the highest density at five hundred ninety-five persons per square kilometer. Bharatpur followed with five hundred three, Dausa with four hundred seventy-six, and Alwar with four hundred thirty-eight, reflecting the higher concentration of residents in the eastern regions.

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5. (3) The female literacy rate is 75.4 percent, matching the male literacy rate.
Official census data from 2011 reveals that Rajasthan's literacy landscape has notable gender disparities. While the overall and male literacy figures are quite high, the female literacy rate is significantly lower than seventy-five percent, actually standing at approximately fifty-two percent. This discrepancy results in a substantial gender gap exceeding twenty-five points, indicating a need for targeted educational interventions.

6. (2) I, II, and III
Demographic analysis of Rajasthan in 2011 shows distinct regional literacy trends. Kota leads the state in female literacy, while Jhunjhunu maintains the highest rate for males. Conversely, Jalore faces significant educational challenges, recording the lowest overall literacy rate and the lowest female literacy rate in the state. These variations highlight the uneven distribution of educational progress across districts.

7. (4) Rapidly declining death rates with high birth rates due to medical advances.
Rajasthan's highest decadal population growth occurred between 1971 and 1981, largely due to a phase of demographic transition. During this period, advancements in medical facilities and public health initiatives significantly lowered the mortality rate. However, birth rates remained high during these years, leading to an explosive increase in the total population as the gap between births and deaths widened.

8. (1) D, B, C, A
In 2011, the eastern districts of Rajasthan exhibited the highest population densities. When arranged in descending order, Jaipur leads with the highest concentration of people, followed by Bharatpur and Dausa. Alwar completes this group with the fourth-highest density. These rankings reflect the favorable agricultural conditions and urban development found in the eastern part of the state compared elsewhere.

(4) A-iii, B-i, C-iv, D-ii
(5) Question not attempted

58. Which of the following districts does NOT fall in the high Scheduled Tribe (ST) population concentration region of southern Rajasthan?
(1) Bikaner
(2) Banswara
(3) Dungarpur
(4) Udaipur
(5) Question not attempted

59. What is the most appropriate reason for the extremely low population density in Jaisalmer district?
(1) Frequent floods devastating agricultural lands and human settlements.
(2) Strict government regulations prohibiting settlement near the border.
(3) Lack of mineral resources preventing any industrial development plans.
(4) Arid climate, sandy terrain, and scarcity of water resources.
(5) Question not attempted

60. Which district of Rajasthan holds the record for the lowest female literacy rate (38.5%) as per the 2011 Census?
(1) Sirohi
(2) Jalore
(3) Barmer
(4) Pratapgarh
(5) Question not attempted

61. Identify the incorrect statement regarding the urbanization rate in Rajasthan.
(1) More than 75 percent of the state's population resides in rural areas.
(2) Kota has the highest percentage of urban population in the state.
(3) The urbanization rate of Rajasthan is roughly 35 percent.
(4) The growth rate of the urban population was higher than that of the rural population between 2001 and 2011.
(5) Question not attempted

62. Given below are two statements:
Statement I: The male literacy rate in Rajasthan is significantly higher than the national male literacy average.
Statement II: The female literacy rate in Rajasthan is also above the national female literacy average.
Which of the following is correct?
(1) Both Statement I and Statement II are true.
(2) Both Statement I and Statement II are false.
(3) Statement I is true but Statement II is false.
(4) Statement I is false but Statement II is true.
(5) Question not attempted

63. Which district in Rajasthan recorded a sex ratio of exactly 994, the highest in the state in 2011?
(1) Dungarpur
(2) Rajsamand
(3) Pali
(4) Pratapgarh
(5) Question not attempted

64. Match the religious groups in List I with their approximate percentage of the population in Rajasthan in 2011 in List II:
List I: (Religious Group)
A. Hindu
B. Muslim
C. Sikh
D. Jain
List II: (Approximate Percentage of Population 2011)
i. 1.3%
ii. 9.1%
iii. 88.5%
iv. 0.9%
Codes:
(1) A-iii, B-ii, C-i, D-iv
(2) A-iii, B-ii, C-iv, D-i
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

65. The dependency ratio mathematically compares the non-working-age population with the working-age population. Which specific age bracket constitutes the 'working-age population' in this standard calculation?
(1) 18-60 years
(2) 15-59 years
(3) 21-65 years
(4) 15-64 years
(5) Question not attempted

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2011 Census was higher than the hundred-person threshold per kilometer.

18. (1) Ganganagar, Jhunjhunu, Pali, Bundi
Decadal growth rates between 2001 and 2011 were not uniform across Rajasthan. When arranged in ascending order, Ganganagar recorded the lowest growth at ten percent. Jhunjhunu, Pali, and Bundi followed with progressively higher rates. This variation reflects the differing socio-economic conditions, agricultural stability, and impact of family planning initiatives across these northern and central districts of the state.

19. (3) Working-age population is larger than the non-working-age share.
The demographic dividend represents a window of economic opportunity for Rajasthan. It occurs when a significant shift in the age structure leads to a larger proportion of the population being in the working-age group compared to the dependent young and elderly groups. To harness this potential, the state must focus on skill development and job creation for its productive workforce.

20. (4) I, II, and IV only
The 2011 Census highlights the diverse religious composition of Rajasthan, with Hindus forming the vast majority and Muslims being the second-largest group. Among all religious communities, Jains are noted for having the highest literacy rates. While Sikhs are a significant minority, their total share is less than two percent, making the statement regarding a five percent share statistically incorrect.

21. (3) Jaipur
Jaipur serves as the most populous district in Rajasthan according to the 2011 Census results. Its high population is a result of rapid urbanization, its status as the administrative capital, and its role as a major economic hub. Other districts like Jodhpur and Alwar also have significant populations, but they remain lower than the total count recorded in Jaipur.

22. (1) A-iv, B-i, C-iii, D-ii
Between 2001 and 2011, western and southern districts of Rajasthan showed high decadal growth. Barmer experienced the highest growth at thirty-two point five percent, followed by Jaisalmer at thirty-one point eight. Jodhpur and Banswara also recorded significant increases of twenty-seven point seven and twenty-six point five percent respectively. These figures illustrate the rapid demographic expansion occurring in these specific regions.

23. (4) 17 persons per sq. km
Jaisalmer district is known for having the lowest population density in Rajasthan and among the lowest in India. According to the 2011 Census, the density was recorded at only seventeen persons per square kilometer. This extremely sparse distribution of people is primarily due to the vast, arid desert terrain and the severe scarcity of water and other essential resources.

24. (1) Both A and R are true and R is the correct explanation of A.
Rajasthan faces a significant literacy gap between males and females, which is among the widest in the country. This disparity is deeply rooted in strong patriarchal social structures and traditional practices like early marriage. Furthermore, the lack of accessible educational facilities in remote rural areas continues to hinder female participation in formal schooling, perpetuating these long-standing demographic and educational imbalances.

25. (3) I, II, III, IV, and V
Rajasthan's population is predominantly rural, with about seventy-five percent of residents living in villages. Kota is identified as the most urbanized district, while Dungarpur has the highest rural concentration. Recent trends show that urban areas are growing faster than rural ones. These statistics are vital for planning infrastructure and services, reflecting the ongoing transition from rural to urban lifestyles.

26. (2) 0 to 6 years
In the Indian census methodology, the child sex ratio specifically measures the number of females per one thousand males within the age group of zero to six years. This indicator is crucial for understanding early childhood survival patterns and detecting gender imbalances resulting from social biases. Monitoring this age bracket helps the government evaluate the effectiveness of various child welfare programs.

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45. (3) Jaisalmer
According to the 2011 Census, several major districts in Rajasthan, such as Jaipur, Jodhpur, and Alwar, have total populations exceeding thirty lakh residents. However, Jaisalmer is the least populous district in the state, with its total population falling well below the ten-lakh mark. This significant difference highlights the uneven distribution of residents across the state's vastly different geographical and climatic regions.

46. (4) Son preference coupled with easy access to illegal abortion technologies.
The decline in the child sex ratio in prosperous districts like Jhunjhunu is largely due to social and technological factors. Despite high literacy, a strong traditional preference for male children persists. When combined with the illegal use of modern medical technologies for gender selection and subsequent abortions, this leads to a skewed ratio. This phenomenon shows that economic prosperity does not always guarantee gender equality.

47. (1) Both Statement I and Statement II are true.
The distribution of Scheduled Castes in Rajasthan shows significant regional variation. Ganganagar district, located in the north, has the highest percentage of Scheduled Caste residents in the state. In contrast, Dungarpur, situated in the southern tribal region, has the lowest percentage of this group. These geographic patterns are important for understanding the demographic landscape and tailoring social welfare programs to specific needs.

48. (2) I, II, and IV only
Female literacy in Rajasthan improved between 2001 and 2011, yet the state still maintains one of the lowest rates in India. Urban female literacy remains significantly higher than rural levels. Jalore stands out as a district with particularly low progress, with female literacy recorded below forty percent. These facts illustrate both the progress made and the remaining challenges in female education.

49. (1) A-iii, B-ii, C-i, D-iv
Literacy patterns in Rajasthan are highly district-specific. Kota holds the record for the highest overall literacy, while Jalore has the lowest. For male literacy, Jhunjhunu district ranks at the top. Conversely, Pratapgarh recorded the lowest male literacy rate in the 2011 Census. These statistics highlight the regional educational disparities that exist between the northern, eastern, and southern parts of the state.

50. (2) 1921
The year 1921 is famously known as the "Demographic Divide" in the history of Rajasthan's census. This is because the decade leading up to 1921 was the only period when the state recorded a negative population growth rate. This decline was caused by extreme mortality from famines and epidemics, after which the population began to grow steadily and more rapidly in subsequent decades.

51. (3) Jhunjhunu
Jhunjhunu district recorded the lowest child sex ratio in Rajasthan during the 2011 Census. The figure was significantly lower than the state average, reflecting deep-seated social issues and the misuse of medical technology for gender selection. This trend is particularly concerning given the district's relatively high literacy rates, suggesting that education alone has not been sufficient to overcome traditional preferences for male children.

52. (4) Declining fertility and mortality rates leading to slowing population growth.
Rajasthan is currently in a phase of demographic transition where both fertility and mortality rates are on a downward trend. While the population is still increasing, the rate of growth has slowed compared to the late twentieth century. This transition is typical for developing regions as they improve healthcare and education, eventually leading toward a more stable and balanced population structure over time.

53. (3) I, II, III, IV, and V
Comparing Rajasthan and India based on 2011 figures reveals distinct demographic variations. Rajasthan exhibits a higher decadal growth rate and lower population density compared to national averages. Furthermore, the state lags in overall literacy and the overall sex ratio, while the child sex ratio remains significantly lower than the nationwide figure, illustrating the diverse developmental challenges present across the state's various districts.

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36. (4) Jaipur, Jodhpur, Alwar, Nagaur
Based on the 2011 Census, the most populated districts in Rajasthan can be ranked in descending order. Jaipur holds the highest population, followed by Jodhpur in the second position. Alwar and Nagaur follow as the third and fourth most populous districts respectively. This order reflects the concentration of the state's residents in major administrative, industrial, and agricultural centers across different regions.

37. (3) Statement I is true but Statement II is false.
Rajasthan possesses a youthful age structure, meaning a large part of its population is in the productive working-age group. However, this demographic setup does not automatically ensure economic prosperity. Without significant investments in education, vocational training, and skill development, the state cannot fully utilize this workforce. Therefore, economic growth depends on proactive policy interventions rather than just the population's age.

38. (2) Male Literacy Rate - 79.2%
The 2011 Census provides specific figures for Rajasthan's demographic markers. While the overall literacy rate is around sixty-six percent and the population density is two hundred, the male literacy rate is recorded at seventy-nine point two percent. Additionally, the child sex ratio stands at eight hundred eighty-eight. Accurate knowledge of these specific values is essential for evaluating the state's development.

39. (4) Only V
Between 2001 and 2011, Rajasthan saw an increase in the overall sex ratio and a decline in the child sex ratio. Rural areas generally have better ratios than urban centers. While Dungarpur has the highest sex ratio in the state at nine hundred ninety-four, it does not actually exceed one thousand. Thus, the claim that any district currently surpasses parity is incorrect.

40. (1) 933
In the 2011 Census, the rural sex ratio of Rajasthan was recorded at nine hundred thirty-three females per one thousand males. This figure is significantly higher than the urban sex ratio, which stands at nine hundred fourteen. The relatively better rural ratio is often attributed to traditional social structures and migration patterns, where males move to urban areas for work while females stay.

41. (1) A-iii, B-i, C-ii, D-iv
Several districts in eastern and western Rajasthan recorded very low sex ratios in 2011. Dholpur had the state's lowest at eight hundred forty-six. Jaisalmer followed with eight hundred fifty-two, while Karauli and Bharatpur recorded eight hundred sixty-one and eight hundred eighty respectively. These low figures indicate significant gender imbalances in these particular regions, necessitating targeted social and administrative interventions.

42. (1) Kota
Kota district achieved the highest female literacy rate in Rajasthan during the 2011 Census. This success is largely due to the district's status as a major educational hub and the presence of numerous coaching institutes and schools. Higher awareness and better access to educational facilities in this urbanized area have contributed to significantly better outcomes for female education compared to other districts.

43. (4) Since 1981, there has been a continuous increase in the decadal growth rate.
Rajasthan's population growth history includes a peak growth rate during the 1971-1981 decade. Contrary to the idea of continuous increase, the decadal growth rate has actually been declining steadily since 1981. This downward trend reflects the gradual success of family planning initiatives and rising literacy levels, which have helped slow the pace of population expansion over the last few decades.

44. (2) I and II only
As of 2011, Rajasthan's social composition includes approximately one crore twenty-two lakh Scheduled Caste individuals and ninety-two lakh Scheduled Tribe individuals. Statistically, the percentage of the Scheduled Caste population is higher than that of the Scheduled Tribe population in the state. Understanding these absolute numbers and their relative proportions is vital for government planning and the effective implementation of reserved category benefits.

NODIA

27. (4) D, B, C, A
In 2011, several districts in Rajasthan stood out for their relatively high female literacy rates. When ranked in descending order, Kota holds the top position, followed by Jaipur and Jhunjhunu. Ganganagar occupies the fourth spot in this group. These rankings demonstrate that urban centers and regions with better educational infrastructure generally achieve higher levels of female education compared to others.

28. (2) Higher overall sex ratio favoring females.
Districts like Dungarpur and Rajsamand often exhibit a higher overall sex ratio because of the significant out-migration of males seeking employment elsewhere. As men leave these districts for work, the proportion of women remaining in the local population increases. This demographic phenomenon results in a sex ratio that appears more favorable to females, reflecting economic migration rather than birth patterns.

29. (3) Bikaner district has the highest proportion of the Scheduled Tribe population in the state.
The distribution of social groups in Rajasthan shows regional concentrations. Ganganagar has the highest percentage of Scheduled Castes, while the Scheduled Tribe population is most concentrated in southern districts like Banswara. Conversely, Bikaner and Nagaur have very low proportions of Scheduled Tribes. Stating that Bikaner has the highest proportion of Scheduled Tribes is factually incorrect according to census data.

30. (4) Only III
Population density in Rajasthan is heavily influenced by geography, with water availability favoring the east and desert conditions limiting the west. Historically, 1921 is recognized as the "Demographic Divide" because it was the only period of negative growth. Stating that 1951 is the universal demographic divide year is incorrect, as 1921 marks the significant transition in the state's census history.

31. (1) A-iv, B-iii, C-ii, D-i
Child sex ratios in 2011 were relatively better in the southern tribal belt of Rajasthan. Banswara recorded the highest at nine hundred thirty-four, followed closely by Pratapgarh at nine hundred thirty-three. Bhilwara and Udaipur also showed higher-than-average figures of nine hundred twenty-eight and nine hundred twenty-four respectively. These statistics highlight the better survival rates for girls in these regions.

32. (2) Ganganagar
During the census decade of 2001-2011, Ganganagar district recorded the lowest population growth rate in Rajasthan. The growth was significantly lower than the state average, standing at approximately ten percent. This low rate is often attributed to better awareness, higher agricultural stability, and the successful implementation of family planning measures in this northern district compared to the state's faster-growing regions.

33. (2) Only III
Rajasthan's population policy, first introduced in 2000, emphasizes stabilizing growth through reduced fertility and improved health services. While these programs have successfully improved various demographic indicators, they have not yet completely eradicated the gender gap in literacy. That specific goal remains a significant challenge, requiring continued social and educational reforms alongside health-focused population stabilization strategies across the state's districts.

34. (1) Both A and R are true and R is the correct explanation of A.
There is a stark contrast in population density between western and eastern Rajasthan. The western districts are sparsely populated because they encompass the Thar Desert, where extreme temperatures and sandy soil prevail. Additionally, the chronic shortage of water for drinking and irrigation makes large-scale settlement difficult. These environmental constraints directly lead to the much lower density observed in the west.

35. (3) Jodhpur
According to 2011 data, only a few districts in Rajasthan have a population density exceeding four hundred persons per square kilometer. These include Jaipur, Bharatpur, Dausa, and Alwar, which are located in the fertile eastern plains. Jodhpur, despite being a major urban center, has a much larger land area that includes desert regions, resulting in an overall density below this threshold.

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54. (2) 13.5 percent
According to the 2011 Census, the Scheduled Tribe population makes up approximately thirteen point five percent of Rajasthan's total population. These communities are primarily concentrated in the southern districts of the state, such as Banswara and Dungarpur. This demographic data is vital for ensuring proper representation and the effective delivery of developmental programs aimed at the socio-economic upliftment of tribal groups.

55. (1) Both Statement I and Statement II are true.
Rajasthan is experiencing a shift in its age structure, with a growing percentage of people in the fifteen to sixty-four age bracket. This increase in the working-age population naturally leads to a decrease in the overall dependency ratio, as there are more potential earners relative to children and the elderly. This shift provides a unique opportunity for economic acceleration if managed with proper policies.

56. (1) Jaipur and Bharatpur
In the 2011 Census, only two districts in Rajasthan were found to have a population density exceeding five hundred persons per square kilometer. Jaipur recorded the highest density in the state, followed by Bharatpur. These high figures are due to the fertile nature of the land, better water availability, and significant urban and industrial development in the eastern plains compared to the rest.

57. (1) A-ii, B-i, C-iv, D-iii
Rajasthan's decadal growth rates have fluctuated significantly over the past century. The 1911-1921 period saw a negative growth of six point two nine percent, while 1971-1981 had the highest growth at nearly thirty-three percent. By the 1991-2001 and 2001-2011 decades, growth rates moderated to twenty-eight point four and twenty-one point three percent respectively, showing a gradual slowing of population expansion.

58. (1) Bikaner
The southern region of Rajasthan, including Banswara, Dungarpur, and Udaipur, is known for its high concentration of Scheduled Tribe populations. These areas have a unique cultural and demographic profile based on tribal heritage. Bikaner, located in the northern desert region, has a very low percentage of Scheduled Tribes and does not fall within this high-concentration southern tribal belt.

59. (4) Arid climate, sandy terrain, and scarcity of water resources.
The extremely low population density in Jaisalmer is a direct result of its harsh environmental conditions. As part of the Thar Desert, the district features vast sandy terrains and an arid climate with very low rainfall. The acute scarcity of water for both human consumption and agriculture prevents the area from supporting a large population, leading to very sparse settlements.

60. (2) Jalore
Jalore district recorded the lowest female literacy rate in Rajasthan in the 2011 Census, with a figure of thirty-eight point five percent. This low level of education among women is a significant concern for the state's developmental goals. It reflects ongoing challenges in providing accessible schooling and overcoming traditional social barriers that have historically limited female participation in the formal education system.

61. (3) The urbanization rate of Rajasthan is roughly 35 percent.
While Rajasthan is seeing an increase in urban dwellers, its population remains mostly rural. About twenty-five percent of the population lives in urban areas, not thirty-five percent. Kota remains the most urbanized district. Between 2001 and 2011, the growth of the urban population outpaced that of rural areas, reflecting the ongoing migration toward cities for better economic and educational opportunities.

62. (2) Both Statement I and Statement II are false.
In 2011, Rajasthan's literacy rates for both males and females were below the respective national averages. The national male literacy was about eighty-one percent, while Rajasthan's was seventy-nine point two. Similarly, Rajasthan's female literacy of fifty-two point one percent was significantly lower than the national female average of sixty-five percent. This highlights the need for continued investment in the state's education system.

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List II: Definition/Feature
i. A continuous urban spread constituting a town and its adjoining urban extensions.
ii. Viable units like a university campus or port area adjacent to a statutory town.
iii. Created by state law, such as a Nagar Palika.
iv. Non-statutory area fulfilling specific demographic criteria.
(1) A-iv, B-iii, C-i, D-ii
(2) A-iii, B-iv, C-ii, D-i
(3) A-iv, B-i, C-iii, D-ii
(4) A-ii, B-iii, C-i, D-iv
(5) Question not attempted

15. Which of the following urban entities is an exception to the rule that all towns must be governed by an elected municipal body under the Rajasthan Municipalities Act, 2009?
(1) Cantonment Board
(2) Nagar Parishad
(3) Nagar Palika
(4) Municipal Corporation
(5) Question not attempted

16. Consider the following statements regarding Jaipur as an urban center.
I. It was founded in 1727 by Maharaja Sawai Jai Singh II.
II. It is India's first planned city based on the principles of Vastu Shastra and Shilpa Shastra.
III. It serves as a classic example of a primate city in Rajasthan's urban hierarchy.
IV. Its walled city was declared a UNESCO World Heritage Site in 2019.
V. It has exactly one Municipal Corporation to manage its entire urban administration.
Which of the above statement(s) is/are correct?
(1) I, II, III, and IV
(2) I, III, IV, and V
(3) II, III, IV, and V
(4) I, II, IV, and V
(5) Question not attempted

17. Which architect and urban planner was instrumental in designing the original grid plan of the city of Jaipur?
(1) Sir Samuel Swinton Jacob
(2) Vidyadhar Bhattacharya
(3) Edwin Lutyens
(4) Charles Correa
(5) Question not attempted

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18. Read the following statements regarding the city of Jodhpur and choose the correct option.
Statement I: Jodhpur is widely known as the Blue City due to the blue-painted houses around the Mehrangarh Fort.
Statement II: The blue paint was historically used by the Brahmin community and is also believed to repel heat and insects in the arid climate.
(1) Both Statement I and Statement II are correct and II explains I.
(2) Both Statement I and Statement II are correct but II does not explain I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

19. Match List-I with List-II regarding cities and their significance and select the correct answer using the codes given below.
List I: City
A. Jodhpur
B. Kota
C. Bikaner
D. Ajmer
List II: Popular Epithet/Significance
i. Educational and Coaching Hub
ii. The Camel Country / Desert City
iii. Heart of Rajasthan / Religious Centre
iv. Sun City / Blue City
(1) A-iv, B-ii, C-i, D-iii
(2) A-iv, B-i, C-ii, D-iii
(3) A-iii, B-i, C-ii, D-iv
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

20. Which river's abundant water supply played a pivotal role in transforming Kota into a major industrial and power generation urban center in Rajasthan?
(1) Luni
(2) Banas
(3) Mahi
(4) Chambal
(5) Question not attempted

72. (1) A significant increase in the child sex ratio (0-6 years).
Between 2001 and 2011, Rajasthan experienced several demographic shifts, including a decline in growth rates and a slight rise in the overall sex ratio. However, one negative trend was the significant decline in the child sex ratio, which dropped from nine hundred nine to eight hundred eighty-eight. This indicates that gender imbalances at birth became more severe during that decade, contrary to any improvement.

73. (3) The urban child sex ratio is higher than the rural child sex ratio.
Data from the 2011 Census shows that the child sex ratio is higher in rural Rajasthan than in urban areas. Specifically, the rural child sex ratio was recorded at eight hundred ninety-two, while the urban ratio was lower at eight hundred seventy-four. This indicates that gender bias and related issues affecting the survival of girl children are currently more pronounced in the state's urban environments.

74. (1) An ageing population and a higher old-age dependency ratio.
As the current demographic dividend in Rajasthan eventually ends, the age structure will shift. As birth rates continue to fall and life expectancy increases, the proportion of elderly people in the population will grow. This will eventually lead to a higher old-age dependency ratio, creating new challenges for the state's healthcare system and social security programs aimed at supporting a larger senior population.

75. (4) Density difference between India and Rajasthan is 182 persons per sq km.
Rajasthan's population density of two hundred is much lower than the national average of three hundred eighty-two. This difference of one hundred eighty-two persons per square kilometer highlights the state's relatively sparse population distribution. While Jaipur's density exceeds five hundred, other districts like Bharatpur also surpass this mark. Additionally, only three districts, not five, have a density recorded below one hundred.

76. (2) 182 persons per sq km.
In 2011, the population density of India was recorded at three hundred eighty-two persons per square kilometer. During the same period, Rajasthan's population density was found to be exactly two hundred. Therefore, the absolute difference between the national and state densities is one hundred eighty-two. This gap reflects Rajasthan's vast land area, much of which is desert, compared to its total population size.

77. (1) Both Statement I and Statement II are true.
Rajasthan has seen a consistent decline in its Total Fertility Rate over the past two decades. This trend is driven by several factors, including better access to female education and increased awareness of family planning methods. Furthermore, as social norms change, the average age of marriage has risen, which naturally contributes to lower fertility levels and helps the state move toward population stabilization goals.

78. (4) Jaipur - 75.5%
The 2011 Census provides accurate literacy figures for major districts. Jaipur recorded an overall literacy rate of seventy-five point five percent. While other districts like Kota and Jhunjhunu have higher rates, specifically seventy-six point six and seventy-four point one percent respectively, Jaipur's figure is a key indicator of educational progress in the state's capital. Sikar's actual literacy rate is also lower than seventy-nine percent.

79. (1) Dungarpur
Several districts in eastern Rajasthan, including Dholpur, Jaisalmer, and Karauli, recorded sex ratios below nine hundred in the 2011 Census. Dholpur had the lowest at eight hundred forty-six. Dungarpur, however, is a notable exception in the state, as its sex ratio was recorded at nine hundred ninety-four, which is significantly higher than nine hundred and the highest in all of Rajasthan.

80. (2) 5.66 percent
According to the 2011 Census, Rajasthan's population of approximately six crore eighty-five lakh represents about five point six six percent of India's total population. Although Rajasthan is the largest state in India by land area, its share of the national population is relatively small due to the presence of the vast desert regions which are very sparsely populated compared to other states.

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CHAPTER 27
Urbanization

1. What is the level of urbanization in Rajasthan according to the 2011 Census?
(1) 21.87 percent
(2) 24.87 percent
(3) 27.87 percent
(4) 31.15 percent
(5) Question not attempted

2. Which of the following statements correctly describes the urbanization trend in Rajasthan over the last few decades?
(1) Urbanization is steadily increasing but remains lower than the national average.
(2) The urban population has decreased steadily due to agricultural prosperity.
(3) The state has experienced rapid and uniform urbanization across all districts.
(4) Rajasthan has the highest rate of urbanization among all north-Indian states.
(5) Question not attempted

3. Match List-I with List-II regarding the urbanization levels in Rajasthan districts and select the correct answer using the codes given below.
List I: Districts of Rajasthan
A. Kota
B. Jaipur
C. Dungarpur
D. Barmer
List II: Level of Urbanization in 2011
i. 52.4 percent
ii. 6.9 percent
iii. 60.3 percent
iv. 6.1 percent
(1) A-iii, B-i, C-iv, D-ii
(2) A-i, B-iii, C-ii, D-iv
(3) A-iii, B-iv, C-i, D-ii
(4) A-iv, B-i, C-iii, D-ii
(5) Question not attempted

4. What is the primary cause-and-effect relationship driving the growth of census towns in Rajasthan in recent years?
(1) Implementation of smart city projects leading to the reclassification of existing metropolitan areas.
(2) High birth rates in urban centers resulting in the physical expansion of established municipal limits.
(3) Administrative decrees upgrading all major district headquarters to large municipal corporations.
(4) Economic diversification in large villages meeting urban demographic criteria.
(5) Question not attempted

5. Consider the following districts of Rajasthan to be arranged in descending order of their urban population percentage based on Census 2011.
I. Ajmer
II. Kota
III. Jaipur
IV. Jodhpur
Which of the following represents the correct sequence?
(1) III, II, IV, I
(2) II, III, I, IV
(3) II, I, III, IV
(4) III, IV, II, I
(5) Question not attempted

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6. Which was the first municipality to be established in Rajasthan during the British colonial period in 1864?
(1) Beawar
(2) Mount Abu
(3) Ajmer
(4) Jaipur
(5) Question not attempted

7. Consider the following statements regarding the historical growth of towns in Rajasthan.
I. Many towns in the medieval period

originated as military garrisons or forts.
II. The introduction of the railway network in the 19th century led to the decline of traditional trade route towns.
III. Post-independence reorganization of princely states resulted in several former capitals losing their administrative prominence.

Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

8. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R). Read the statements and choose the correct option.
Assertion (A): The historical towns of Churu and Ramgarh experienced economic stagnation during the late 19th century.
Reason (R): The development of coastal ports and the railway network diverted the traditional caravan trade routes away from the Thar Desert.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. Identify the odd one out among the following historical towns based on their primary function during their foundation.
(1) Chittorgarh
(2) Kumbhalgarh
(3) Bhilwara
(4) Ranthambore
(5) Question not attempted

10. A village in Rajasthan has a population of 6000, a density of 450 persons per square kilometer, and 60 percent of its male working population is engaged in agriculture. According to the Census of India, how will this settlement be classified?
(1) Rural Settlement
(2) Statutory Town
(3) Census Town
(4) Urban Agglomeration
(5) Question not attempted

11. Which of the following is an essential criterion for a settlement to be designated as a Statutory Town in Rajasthan?
(1) The attainment of a minimum population threshold exceeding 5000 residents.
(2) At least 75 percent of the male main working population engaged in non-agricultural pursuits.
(3) A population density of at least 400 persons per square kilometer in the entire area.
(4) Presence of a municipality, corporation, cantonment board, or notified town area committee.
(5) Question not attempted

12. Consider the following statements regarding the classification of urban centers based on population size by the Census of India.
I. Class I towns have a population of 100,000 and above.
II. Class II towns have a population between 50,000 and 99,999.
III. Class III towns have a population between 20,000 and 49,999.
IV. The majority of the urban population in Rajasthan lives in Class IV and Class V towns.

Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) III and IV only
(3) IV only
(4) II and III only
(5) Question not attempted

13. Which of the following towns is recognized primarily as an industrial city heavily reliant on the textile sector in Rajasthan?
(1) Pushkar
(2) Bikaner
(3) Bhilwara
(4) Jaisalmer
(5) Question not attempted

14. Match List-I with List-II regarding types of urban units and select the correct answer using the codes given below.
List I: Type of Urban Unit
A. Census Town
B. Statutory Town
C. Urban Agglomeration
D. Outgrowth

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63. (1) Dungarpur
Dungarpur district holds the record for the highest sex ratio in Rajasthan according to the 2011 Census, with nine hundred ninety-four females per one thousand males. This near-parity is unique in the state and is often attributed to the cultural norms of the local tribal population and the out-migration of males. This figure stands in sharp contrast to the much lower ratios found in many other districts.

64. (1) A-iii, B-i, C-ii, D-iv
Rajasthan's religious makeup in 2011 shows Hindus as the largest group at eighty-eight point five percent. Muslims follow as the second-largest community at nine point one percent. Sikhs and Jains represent smaller minorities, constituting approximately one point three and point nine percent of the total population respectively. These percentages reflect the long-standing cultural and religious diversity present across the various regions of the state.

65. (4) 15-64 years
The dependency ratio is calculated by comparing the dependent population to those in the working-age bracket. In standard international and census demographic analysis, the working-age population is defined as individuals between fifteen and sixty-four years old. This group is considered economically productive, supporting those aged zero to fourteen and those sixty-five and above, who are typically considered outside the primary labor force.

66. (1) 17.8 percent
The Scheduled Caste population is a significant demographic component of Rajasthan, making up approximately seventeen point eight percent of the total population as per the 2011 Census. This group is distributed throughout the state but shows higher concentrations in northern districts like Ganganagar. These statistics are essential for the government to plan and allocate resources for social justice and empowerment programs.

67. (3) Barmer
Between 2001 and 2011, Rajasthan's average decadal growth rate was twenty-one point three percent. Districts like Ganganagar, Jhunjhunu, and Pali recorded growth rates well below this state average. Barmer, however, was an outlier in the opposite direction, recording one of the highest growth rates in the state at over thirty-two percent, which is significantly above the statewide demographic average.

68. (4) Pratapgarh and Banswara
Male literacy rates in 2011 were not uniform across the state, with some southern districts recording lower percentages. Pratapgarh and Banswara both shared the lowest male literacy rate in Rajasthan at sixty-nine point five percent. This indicates that educational challenges in these tribal-dominated regions affect both genders, requiring broad-based improvements in school infrastructure and enrollment drives for the entire local community.

69. (1) Both Statement I and Statement II are true.
In Rajasthan, urban areas show significantly higher literacy levels for both men and women compared to rural regions. Furthermore, the gap between male and female literacy is much wider in villages than in cities. These differences are due to better school accessibility and changing social attitudes in urban centers, whereas rural areas still face challenges with traditional norms and limited educational infrastructure.

70. (2) Promotion of institutional deliveries to reduce mortality rates.
The Janani Suraksha Yojana is a key health initiative in Rajasthan aimed at improving maternal and neonatal outcomes. By providing financial incentives for institutional deliveries, the program encourages women to give birth in hospitals rather than at home. This strategy is designed to ensure professional medical care during childbirth, thereby significantly reducing maternal and infant mortality rates across both rural and urban areas.

71. (4) Bikaner and Nagaur
While southern Rajasthan has a very high concentration of Scheduled Tribes, other parts of the state have very few. Bikaner and Nagaur districts are notable for having the lowest percentage of Scheduled Tribe population in the state, at approximately zero point three percent each. This geographic disparity in tribal distribution is a key feature of Rajasthan's demographic map and influences regional social policies.

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21. Select the correct sequence of the top four cities of Rajasthan arranged in descending order based on their total population (Census 2011).
(1) Jaipur, Jodhpur, Kota, Bikaner
(2) Jaipur, Kota, Jodhpur, Ajmer
(3) Jaipur, Jodhpur, Bikaner, Kota
(4) Jaipur, Bikaner, Jodhpur, Kota
(5) Question not attempted

22. In which year was the desert city of Bikaner founded by Rao Bika?
(1) 1459
(2) 1488
(3) 1559
(4) 1727
(5) Question not attempted

23. Consider the following statements about Ajmer as a historical and religious urban center.
I. It is renowned for the Dargah of Sufi saint Khwaja Moinuddin Chishti.
II. Pushkar, a town situated very close to Ajmer, is famous for the Brahma Temple.
III. Ajmer was the capital of the Chauhan dynasty before the establishment of the Delhi Sultanate.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

24. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R). Read the statements and choose the correct option.
Assertion (A): Over the last two decades, Kota has experienced a unique demographic shift with a massive influx of a young floating population.
Reason (R): Kota has emerged as a premier national hub for engineering and medical entrance coaching institutes.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

25. Which of the following statements incorrectly characterizes the urban growth of Bikaner?
(1) It historically flourished as a vital transit point on the ancient caravan trade routes of Central Asia.
(2) It is heavily dependent on the Indira Gandhi Canal for its drinking water supply.
(3) Its economy is entirely devoid of agricultural processing and is strictly based on heavy metal industries.
(4) It is known for its distinct urban architecture featuring red sandstone havelis.
(5) Question not attempted

26. Which of the following is not considered a primary contributor to the industrial economy of Kota city?
(1) Large-scale offshore oil drilling
(2) Chemical and fertilizer plants
(3) Thermal and atomic power generation
(4) Kota Doria textile weaving
(5) Question not attempted

27. Match List-I with List-II regarding historic cities and their founders and select the correct answer using the codes given below.
List I: Historic City
A. Jaipur
B. Jodhpur
C. Udaipur
D. Ajmer
List II: Founder
i. Rao Jodha
ii. Maharana Udai Singh II
iii. Sawai Jai Singh II
iv. Ajayapala Chauhan
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-ii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

28. Which committee recommended making Jaipur the capital of Rajasthan upon the integration of princely states?
(1) Fazal Ali Commission
(2) B.R. Patel Committee
(3) P.B. Menon Committee
(4) K.M. Munshi Committee
(5) Question not attempted

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ANSWERS

1. (2) 24.87 percent
Rajasthan recorded an urban population share of 24.87 percent according to the 2011 Census data. This indicates that nearly one-fourth of the state's residents live in cities and towns. Urbanization levels in Rajasthan are relatively lower compared to the national average of India, reflecting a predominantly rural demographic structure across the state with significant regional variations.

2. (1) Urbanization is steadily increasing but remains lower than the national average.
The demographic trends in Rajasthan show a consistent rise in the proportion of people living in urban areas over several decades. Despite this steady growth, the state's urbanization rate lags behind the overall national average for India. This pattern is driven by migration from rural regions and the expansion of small towns into larger and more complex urban centers.

3. (1) A-iii, B-i, C-iv, D-ii
Kota has the highest urbanization level among Rajasthan's districts at 60.3 percent due to industrial and educational growth. Jaipur follows with 52.4 percent as the administrative capital. Conversely, districts like Dungarpur and Barmer show very low urbanization rates, with Dungarpur at 6.4 percent and Barmer at 7.0 percent, reflecting their predominantly rural and agricultural socio-economic nature.

4. (4) Economic diversification in large villages meeting urban demographic criteria.
Census towns emerge when large villages transition from agricultural activities to non-farming sectors like trade and services. To be classified as a census town, a settlement must have at least five thousand residents, a density of four hundred people per square kilometer, and seventy-five percent of the male workforce engaged in non-agricultural occupations, signaling a significant economic shift.

5. (2) II, III, I, IV
Based on the 2011 Census, Kota leads Rajasthan in urban population percentage at 60.3 percent. Jaipur follows as the second most urbanized district with 52.4 percent. Ajmer occupies the third position with 40.1 percent urbanization, while Jodhpur follows in the fourth spot with 34.3 percent. This sequence highlights the industrial and administrative centers' demographic dominance in the state.

6. (2) Mount Abu
The establishment of formal municipal governance in Rajasthan began during the British colonial era. Mount Abu became the first town to have a municipality in 1864. This mountain retreat served as an important administrative and summer station for the British, necessitating early urban management systems. Other towns like Ajmer and Beawar followed suit in subsequent years for administration.

7. (4) I, II, and III
Rajasthan's urban history is shaped by military, economic, and political factors. Medieval towns often developed around strategic forts and garrisons. The nineteenth-century railway expansion altered traditional trade routes, causing some ancient towns to decline. Following India's independence, the reorganization of various princely states led to a shift in administrative importance, affecting several former capital cities and their growth.

8. (1) Both A and R are true and R is the correct explanation of A.
In the late nineteenth century, traditional commercial hubs in the Thar Desert, like Churu and Ramgarh, faced significant economic downturns. This stagnation occurred because the British developed modern railway networks and coastal ports. These innovations diverted the lucrative caravan trade routes away from the desert, causing the influential merchant communities to migrate to rising metropolitan centers for business.

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ii. Bisalpur Dam
iii. Chambal River System
iv. Anasagar Lake
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

36. What was the major economic effect of the establishment of the Rajputana-Malwa Railway headquarters and the locomotive workshops in Ajmer during the late 19th century?
(1) It triggered a massive out-migration of the local skilled labor population to Bombay.
(2) It caused the decline of the local textile industry due to strict colonial railway laws.
(3) It necessitated shifting the capital of Rajputana from Jaipur to Ajmer on a permanent basis.
(4) It turned Ajmer into a major industrial and transport hub, spurring rapid urban growth.
(5) Question not attempted

37. Which of the following is an exception to the original town planning features of the walled city of Jaipur?
(1) The entire city area is divided into nine large rectangular blocks or specific sectors.
(2) The main streets and arterial roads intersect each other at precise right angles.
(3) The central axis is designed around a large artificial lake serving as a protective moat.
(4) The historical architecture features buildings with uniformly painted pink stone facades.
(5) Question not attempted

38. Bikaner's historical prosperity and urban growth prior to the 20th century were heavily dependent on which geographical factor?
(1) Being the central maritime port for all inland waterways within the Thar Desert region.
(2) Its location on caravan routes connecting Central Asia to the western Gujarat coast.
(3) The discovery of massive coal and mineral reserves within the immediate city limits.
(4) The presence of a perennial river system flowing directly through the primary city center.
(5) Question not attempted

39. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R). Read the statements and choose the correct option.
Assertion (A): Jaipur demonstrates the characteristics of a primate city in Rajasthan's urban landscape.
Reason (R): The population of Jaipur is roughly three times larger than that of Jodhpur, the state's second-largest city, showing high demographic and economic dominance.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

40. Consider the following cities of Rajasthan.
I. Kota
II. Sikar
III. Jaisalmer
Which of the above statement(s) is/are correct regarding cities that have prominently emerged as hubs for entrance exam coaching in recent years?
(1) I and II only
(2) I and III only
(3) II and III only
(4) I, II, and III
(5) Question not attempted

41. According to Mark Jefferson, what defines the 'Law of the Primate City'?
(1) A city where the total population size is strictly capped by government regulations.
(2) An urban center that focuses exclusively on primary economic activities like agriculture.
(3) The largest city in a region is super-eminent in size and national influence.
(4) A city that has multiple central business districts with equal economic power.
(5) Question not attempted

42. Read the following statements regarding the urban growth pattern of Rajasthan and choose the correct option.
Statement I: The urban growth pattern of Rajasthan is highly balanced, with an even

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(3) Slum improvement and upgradation
(4) Regulation of primary agricultural cooperative societies (PACS)
(5) Question not attempted

69. Which constitutional body is responsible for the superintendence, direction, and control of the preparation of electoral rolls for, and the conduct of, all elections to the Municipalities in Rajasthan?
(1) Election Commission of India
(2) Rajasthan Public Service Commission
(3) State Election Commission
(4) Directorate of Local Bodies
(5) Question not attempted

70. Identify the incorrect pair regarding the structure of Urban Local Bodies in Rajasthan.
(1) Nagar Nigam - Mayor
(2) Ward Committee - Chief Minister
(3) Nagar Parishad - Sabhapati
(4) Nagar Palika - Chairman
(5) Question not attempted

71. Which of the following is NOT a recognized source of revenue for Urban Local Bodies in Rajasthan?
(1) Property Tax (UD Tax)
(2) Grants-in-aid from the State Government based on State Finance Commission recommendations
(3) User charges for civic amenities like water and sanitation
(4) Corporate Income Tax levied on multinational companies
(5) Question not attempted

72. A large village in Rajasthan is rapidly developing commercial characteristics and non-agricultural employment, but is not yet fully urbanized. Under the 74th Amendment, which specific type of urban local body is constituted for such a "transitional area"?
(1) Nagar Panchayat / Nagar Palika
(2) Nagar Parishad
(3) Municipal Corporation
(4) Metropolitan Planning Committee
(5) Question not attempted

73. What is the most significant constraint leading to the challenge of sustainable urbanization in cities like Jodhpur, Ajmer, and Jaipur?
(1) Unavailability of cement and other essential modern construction materials.
(2) Extreme lack of sunlight leading to abnormally high electricity consumption.
(3) Scarcity of sustainable freshwater resources to support the growing population.
(4) Total lack of historical architecture and monuments to attract new tourists.
(5) Question not attempted

74. Select the correct sequence of spatial planning instruments utilized in urban planning, arranged from the macro (city-wide) scale to the micro (local) scale.
(1) Zonal Development Plan, Master Plan, Local Area Plan
(2) Master Plan, Zonal Development Plan, Local Area Plan
(3) Local Area Plan, Master Plan, Zonal Development Plan
(4) Master Plan, Local Area Plan, Zonal Development Plan
(5) Question not attempted

75. A high concentration of concrete buildings, asphalt roads, and lack of green cover in the central parts of Jaipur leads to local temperatures being significantly higher than in surrounding rural areas. What is this phenomenon called?
(1) Greenhouse Effect
(2) Ozone Depletion
(3) Thermal Inversion
(4) Urban Heat Island Effect
(5) Question not attempted

76. Which of the following statements about the challenges of urbanization in Rajasthan is incorrect?
(1) Traffic congestion and inadequate public transport systems are major issues in metropolitan areas like Jaipur.
(2) All cities in Rajasthan have successfully achieved 100 percent coverage of piped underground sewerage networks.
(3) Solid waste management remains a critical challenge due to improper segregation at the source.
(4) Urban flooding during monsoons is

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temperatures during the peak summer months.
(4) Increased availability of natural groundwater resources for the urban population.
(5) Question not attempted

49. Which of the following is NOT generally considered a pull factor for urban-rural migration in Rajasthan?
(1) Regular wage employment opportunities in the expanding urban service sector.
(2) Social rigidities and caste-based conflicts within rural village communities.
(3) Better access to basic infrastructure like electricity, sanitation, and water.
(4) Proximity to educational coaching centers and specialized technical institutes.
(5) Question not attempted

50. Consider the following consequences of rapid urbanization and migration in Rajasthan.
I. Expansion of slum areas and squatter settlements.
II. Increased pressure on civic amenities like water supply and solid waste management.
III. Growth of the urban informal sector.
IV. Decrease in urban vehicular traffic and pollution levels.
V. Transformation of land use in the rural-urban fringe.
Which of the above statement(s) is/are correct?
(1) I, II, III, and V
(2) I, III, IV, and V
(3) II, III, IV, and V
(4) I, II, IV, and V
(5) Question not attempted

51. According to the 2011 Census data, what is the approximate percentage of the urban population living in slums in Rajasthan?
(1) Less than 2 percent
(2) Around 10-11 percent
(3) Around 25-26 percent
(4) More than 40 percent
(5) Question not attempted

52. Consider the following statements regarding the causes of slum proliferation in Rajasthan's cities.
I. Inability of the urban poor to access the formal housing market.
II. Inadequate implementation of affordable housing schemes for Economically Weaker Sections (EWS).
III. Strict prohibition of rural migration into major cities.
Which of the above statement(s) is/are correct?
(1) I and III only
(2) II and III only
(3) I and II only
(4) I, II, and III
(5) Question not attempted

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53. Read the following statements regarding schemes for urban poverty alleviation and choose the correct option.
Statement I: The Rajiv Awas Yojana (RAY) aimed at bringing existing slums within the formal system and enabling them to avail of basic amenities.
Statement II: RAY strictly mandated the forced eviction and rural relocation of all slum dwellers without providing alternative housing.
(1) Both Statement I and Statement II are correct and II explains I.
(2) Both Statement I and Statement II are correct but II does not explain I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

54. Identify the odd one out among the following government schemes, based on its primary focus area not being urban development or urban poverty alleviation.
(1) Pradhan Mantri Awas Yojana (Urban)
(2) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
(3) National Urban Livelihoods Mission (NULM)
(4) Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
(5) Question not attempted

55. According to the Census of India, which of the following best defines a "Slum"?
(1) Any urban settlement with a total population exceeding one million residents.
(2) A residential area where average household income is below the national average.

distribution of large cities across all its districts.
Statement II: Jaipur dominates the urban landscape of Rajasthan, absorbing a disproportionate share of investments, infrastructure, and migration.
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct and Statement II is incorrect.
(4) Statement I is incorrect and Statement II is correct.
(5) Question not attempted

43. According to the 2011 Census, approximately what percentage of Rajasthan's total urban population resides in Jaipur district alone?
(1) 5 percent
(2) 10 percent
(3) 20 percent
(4) 45 percent
(5) Question not attempted

44. Consider the following statements regarding the causes and consequences of urban-rural migration in Rajasthan.
I. Frequent droughts and agricultural distress act as major push factors from rural areas.
II. Employment opportunities in the construction and unorganized sectors act as major pull factors to cities.
III. Rural-urban migration has led to the feminization of agriculture in many rural areas of Rajasthan.
IV. Migration strictly reduces the population density of urban slums.
Which of the above statement(s) is/are correct?
(1) I, II, and III
(2) I, III, and IV
(3) II, III, and IV
(4) I, II, and IV
(5) Question not attempted

45. Identify the correct pair regarding the categorization of migration factors.
(1) Better educational facilities in cities - Push Factor
(2) Lack of medical facilities in villages - Pull Factor
(3) Failure of monsoon leading to crop loss - Push Factor
(4) Higher wages in urban industries - Push Factor
(5) Question not attempted

46. What is the most appropriate description of the demographic consequence of male-dominated rural-to-urban out-migration in regions like Shekhawati and Mewar?
(1) It results in an evenly balanced and improved sex ratio in the destination cities.
(2) It causes rapid and sustainable industrialization of the rural source regions.
(3) It entirely eliminates poverty and unemployment in the urban destination centers.
(4) It increases the proportion of elderly, women, and children left behind in rural areas.
(5) Question not attempted

47. Match List-I with List-II regarding migration aspects and their examples and select the correct answer using the codes given below.
List I: Migration Aspect
A. Push Factor
B. Pull Factor
C. Source Region Impact
D. Destination Region Impact
List II: Example
i. Proliferation of informal settlements/slums
ii. Remittance economy and changed rural household structure
iii. Availability of specialized healthcare and higher education
iv. Decline of traditional rural handicrafts and low agricultural yield
(1) A-iv, B-iii, C-ii, D-i
(2) A-iii, B-iv, C-i, D-ii
(3) A-iv, B-ii, C-iii, D-i
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

48. What is the direct environmental effect of unchecked urban sprawl driven by rapid migration on cities like Jaipur and Jodhpur?
(1) Significant increase in urban forest cover and biodiversity across the metropolis.
(2) Depletion of peri-urban agricultural lands and encroachment on drainage channels.
(3) Drastic reduction in ambient air

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through an increase in municipal property taxes.
(4) A Centrally Sponsored Scheme where Central and State governments share costs 50:50.
(5) Question not attempted

63. Which Constitutional Amendment Act provided formal constitutional recognition to Urban Local Bodies (Municipalities) in India?
(1) 72nd Amendment Act
(2) 73rd Amendment Act
(3) 74th Amendment Act
(4) 76th Amendment Act
(5) Question not attempted

64. Match List-I with List-II regarding the types of Urban Local Bodies in Rajasthan and select the correct answer using the codes given below.
List I: Urban Local Body Type in Rajasthan
A. Municipal Corporation (Nagar Nigam)
B. Municipal Council (Nagar Parishad)
C. Municipal Board (Nagar Palika)
D. Cantonment Board
List II: General Population Criterion
i. Transition areas/smaller urban areas (generally population below 1 lakh)
ii. Smaller urban areas (generally population between 1 lakh and 5 lakhs)
iii. Larger urban areas (generally population above 5 lakhs)
iv. Administered directly by the Ministry of Defence
(1) A-iii, B-ii, C-i, D-iv
(2) A-i, B-ii, C-iii, D-iv
(3) A-iii, B-i, C-ii, D-iv
(4) A-ii, B-iii, C-iv, D-i
(5) Question not attempted

65. As of recent administrative reorganizations in Rajasthan, cities like Jaipur, Jodhpur, and Kota have a specific governance structure. What is it?
(1) They are administered by completely privatized corporate bodies.
(2) Each of these cities has been divided into two separate Municipal Corporations (Nagar Nigams).
(3) They operate under a single Nagar Palika governed by a rural Sarpanch.
(4) They have been placed directly under the administrative control of the Union Ministry of Home Affairs.
(5) Question not attempted

66. Consider the following functions and identify which combination falls under the purview of Urban Local Bodies according to the 12th Schedule of the Constitution.
I. Urban planning including town planning.
II. Regulation of land-use and construction of buildings.
III. Planning for economic and social development.
IV. Fire services.
V. Management of international borders.
Which of the above combination falls under the purview of Urban Local Bodies according to the 12th Schedule of the Constitution?
(1) I, II, III, and IV
(2) I, III, IV, and V
(3) II, III, IV, and V
(4) I, II, IV, and V
(5) Question not attempted

67. Read the following statements regarding the election of the Mayor (Mahapaur) in Municipal Corporations of Rajasthan and choose the correct option.
Statement I: The Mayor is currently elected directly by the eligible voters of the entire city.
Statement II: The State Government in Rajasthan frequently amends the municipal laws altering the method of mayoral elections between direct and indirect methods.
(1) Both Statement I and Statement II are correct and II explains I.
(2) Both Statement I and Statement II are correct but II does not explain I.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

68. Identify the odd one out among the following items, as it is NOT included in the 18 functional items listed in the 12th Schedule for Municipalities.
(1) Water supply for domestic, industrial and commercial purposes
(2) Public health, sanitation conservancy and solid waste management

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(3) Unplanned commercial markets operating without legitimate municipal licenses.
(4) A compact, congested area with at least 300 people and poor infrastructure.
(5) Question not attempted

56. Given below are two statements, one labeled as Assertion (A) and the other as Reason (R). Read the statements and choose the correct option.
Assertion (A): Slums in Rajasthan, like in other Indian states, are closely associated with a high concentration of informal sector employment.
Reason (R): Slum dwellers predominantly lack the formal education and specialized skills required for high-paying formal corporate sector jobs, pushing them into domestic work, street vending, and casual labor.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

57. In which year was the Smart Cities Mission launched by the Government of India?
(1) 2012
(2) 2014
(3) 2015
(4) 2018
(5) Question not attempted

58. Consider the following cities of Rajasthan.
I. Jaipur
II. Udaipur
III. Kota
IV. Ajmer
Which of the above cities were selected under the Smart Cities Mission?
(1) I, II, and III only
(2) I, III, and IV only
(3) II, III, and IV only
(4) I, II, III, and IV
(5) Question not attempted

59. Match List-I with List-II regarding Smart City components and concepts and select the correct answer using the codes given below.
List I: Smart City Component
A. Retrofitting
B. Redevelopment
C. Greenfield Development
D. Pan-City Initiative
List II: Core Concept
i. Replacement of the existing built environment to enable co-creation of a new layout with enhanced infrastructure.
ii. Planning and developing previously vacant areas using innovative planning tools.
iii. Application of Smart Solutions to the existing city-wide infrastructure (e.g., Intelligent Traffic Management).
iv. Planning in an existing built-up area to achieve smart city objectives to make it more efficient and livable.
(1) A-iv, B-i, C-ii, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-iii, C-ii, D-i
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

60. Which of the following major cities of Rajasthan is an exception, as it was NOT selected for development under the central government's Smart Cities Mission?
(1) Jaipur
(2) Jodhpur
(3) Udaipur
(4) Ajmer
(5) Question not attempted

61. Under the Smart Cities Mission, what is the role of a Special Purpose Vehicle (SPV)?
(1) A specialized electric public transport bus system introduced in smart cities.
(2) A centralized federal agency in Delhi that directly awards all municipal contracts.
(3) A city-level limited company, promoted by the State and ULB, to implement projects.
(4) A dedicated development fund set up by the World Bank for greenfield expansion.
(5) Question not attempted

62. Which of the following statements correctly describes the funding pattern of the Smart Cities Mission?
(1) A 100 percent Centrally Sponsored Scheme with no financial burden on the state.
(2) A program relying entirely on Foreign Direct Investment routed through private banks.
(3) A project funded by local urban bodies

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exacerbated by the encroachment of natural drainage paths.
(5) Question not attempted

77. The Solid Waste Management Rules, 2016 mandate source segregation of waste to improve municipal sanitation. What are the three specified categories for segregation at the household level?
(1) Plastic, Glass, and Metal items that require separate industrial processing.
(2) Combustible, Non-combustible, and E-waste requiring different disposal methods.
(3) Biodegradable, Dry (recyclables), and Domestic Hazardous (diapers, napkins) waste.
(4) Liquid, Solid, and Gaseous waste products generated by urban households daily.
(5) Question not attempted

78. Which financial institution/fund was set up specifically to leverage funds for implementing urban infrastructure projects in the state?
(1) Rajasthan Rural Livelihood Project (RRLP)
(2) Rajasthan Agricultural Competitiveness Project (RACP)
(3) Rajasthan Forestry and Biodiversity Project (RFBP)
(4) Rajasthan Urban Infrastructure Development Project (RUIDP)
(5) Question not attempted

79. Which of the following is NOT an objective of the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) implemented in Rajasthan's urban centers?
(1) Provide free agricultural land to urban slum dwellers in the city outskirts.
(2) Ensure that every household has access to a tap with an assured supply of water and a sewerage connection.
(3) Increase the amenity value of cities by developing greenery and well-maintained open spaces.
(4) Reduce pollution by switching to public transport or constructing facilities for non-motorized transport.
(5) Question not attempted

80. In urban planning strategies for tackling traffic and housing challenges in cities like Jaipur, what does the concept of TOD stand for?
(1) Traffic Overload Distribution
(2) Transit-Oriented Development
(3) Town Optimization Design
(4) Temporary Occupancy Directive
(5) Question not attempted

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29. Consider the following statements about Jodhpur's heritage and administrative significance.
I. It is the second-largest city in Rajasthan by population.
II. The principal seat of the Rajasthan High Court is located in Jodhpur.
III. It houses significant heritage monuments like Umaid Bhawan Palace and Jaswant Thada.
IV. It was never integrated into the state of Rajasthan and functions as a separate Union Territory.
Which of the above statement(s) is/are correct?
(1) I, II, and IV
(2) I, II, and III
(3) II, III, and IV
(4) I, III, and IV
(5) Question not attempted

30. Identify the correct pair regarding the administrative status of cities in Rajasthan before the States Reorganisation Act of 1956.
(1) Jaipur - Direct British Province
(2) Jodhpur - Portuguese Colony
(3) Kota - French Settlement
(4) Ajmer - Part C State
(5) Question not attempted

31. What is the most appropriate description of a "Primate City" in the context of urban geography?
(1) A city significantly larger and more economically dominant than others in the urban system.
(2) An urban center that exclusively functions as the political and administrative capital of a state.
(3) A city characterized primarily by its ancient historical origins, temples, and religious sites.
(4) A newly developed urban area completely devoid of informal settlements or slum populations.
(5) Question not attempted

32. Consider the following statements regarding the characteristics of Kota.
I. It is situated on the banks of the Chambal River.
II. It is renowned for the production of Kota Stone, a fine-grained variety of limestone.
III. It is a part of the Smart Cities Mission in Rajasthan.
IV. It is the administrative headquarters of the Hadoti region.
V. It was historically a part of the Marwar kingdom.
Which of the above statement(s) is/are correct?
(1) I, II, III, and IV
(2) I, III, IV, and V
(3) II, III, IV, and V
(4) I, II, IV, and V
(5) Question not attempted

33. Which central research institute, reflecting its desert city characteristics and agricultural economy, is located in Bikaner?
(1) Central Arid Zone Research Institute (CAZRI)
(2) National Research Centre on Camel (NRCC)
(3) National Research Centre on Equines (NRCE)
(4) Central Sheep and Wool Research Institute (CSWRI)
(5) Question not attempted

34. Consider the following major cities of Rajasthan to be arranged in the chronological order of their historical foundation, from earliest to latest.
I. Bikaner
II. Jaipur
III. Ajmer
IV. Jodhpur
Which of the following is the correct chronological sequence?
(1) III, I, IV, II
(2) III, IV, I, II
(3) IV, III, I, II
(4) III, IV, II, I
(5) Question not attempted

35. Match List-I with List-II regarding cities and their major water sources and select the correct answer using the codes given below.
List I: City
A. Jaipur
B. Jodhpur
C. Ajmer
D. Kota
List II: Major Water Source/Reservoir
i. Kaylana Lake / Rajiv Gandhi Lift Canal

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9. (3) Bhilwara
Chittorgarh, Kumbhalgarh, and Ranthambore were historically established as defensive military garrisons and fort towns by various Rajput dynasties. Their primary function was strategic and political. In contrast, Bhilwara developed essentially as a commercial and industrial center, eventually becoming a major textile hub. This difference in origin distinguishes Bhilwara from the other fortress-based historical settlements in the Rajasthan region.

10. (1) Rural Settlement
A settlement is classified as urban by the Census only if it meets three specific criteria simultaneously. While this village has over five thousand residents and a density above four hundred, only sixty percent of its male workforce is in non-agricultural sectors. Since the requirement is a minimum of seventy-five percent, the settlement remains classified as a rural settlement.

11. (4) Presence of a municipality, corporation, cantonment board, or notified town area committee.
Statutory towns are urban units defined by law regardless of their demographic characteristics. Any settlement that possesses an urban local body, such as a municipal corporation, municipal council, or cantonment board, is automatically classified as a statutory town. This legal status is conferred by the state government through specific administrative notifications under the relevant municipal legislation and governing acts.

12. (3) IV only
The Census of India categorizes urban centers into six classes based on population size. Class I towns exceed one hundred thousand residents, while Class II and III cover specific intermediate ranges. In Rajasthan, the majority of the urban population actually resides in Class I cities rather than Class IV or V towns. Therefore, the claim about smaller towns is inaccurate.

13. (3) Bhilwara
Bhilwara is recognized as the textile capital of Rajasthan due to its high concentration of spinning and weaving mills. The city's economy is primarily driven by the production of synthetic fabrics and denim, earning it the title of the Manchester of Rajasthan. This industrial specialization distinguishes it from religious or desert-based urban centers like Pushkar, Bikaner, or Jaisalmer.

14. (1) A-iv, B-iii, C-i, D-ii
Urban units are classified into distinct categories based on legal and demographic factors. Census towns fulfill specific criteria but lack local bodies, while statutory towns are created by state law. An urban agglomeration represents a continuous urban spread, and an outgrowth consists of viable units like university campuses or ports that are physically adjacent to a statutory town center.

15. (1) Cantonment Board
While most urban areas in Rajasthan are governed by elected municipal bodies under the state's Municipalities Act, cantonment boards are an exception. These boards are established for the administration of military stations and the civilian population residing there. They function under the administrative control of the Union Ministry of Defence rather than the state government's local body department.

16. (1) I, II, III, and IV
Jaipur was founded in 1727 and is celebrated as a meticulously planned city based on ancient architectural principles. Its walled city is recognized as a UNESCO World Heritage Site. Historically, it acts as a primate city due to its size. However, modern administrative reforms have split its governance into two separate municipal corporations, making the fifth statement currently incorrect.

17. (2) Vidyadhar Bhattacharya
The original layout of Jaipur was designed by Vidyadhar Bhattacharya, a brilliant architect and scholar from Bengal. Under the patronage of Maharaja Sawai Jai Singh II, he applied the principles of Vastu Shastra and Shilpa Shastra to create a grid-based city plan. This planning included wide streets and organized sectors, making it a masterpiece of eighteenth-century urban design.

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correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

8. In the context of Scheduled Areas in Rajasthan, what is the primary criterion for declaring an area under the Tribal Sub-Plan (TSP)?
(1) The area must have a minimum of 10 percent ST population.
(2) The area must have a minimum of 25 percent ST population.
(3) The area must have a minimum of 50 percent ST population.
(4) The area must be exclusively inhabited by Particularly Vulnerable Tribal Groups.
(5) Question not attempted

9. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The Saharia tribe is the only tribe in Rajasthan included in the Particularly Vulnerable Tribal Groups (PVTGs) list by the Government of India.
Reason (R): The Saharia tribe exhibits pre-agricultural levels of technology, extremely low literacy rates, and a stagnant or declining population.
Which of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

10. The Gavri dance, a famous 40-day long traditional dance-drama, is exclusively performed by the men of which tribe?
(1) Bhil
(2) Meena
(3) Garasia
(4) Saharia
(5) Question not attempted

11. Match the tribal headmen titles in List-I with their respective tribes in List-II.
List-I: (Title of Headman)
A. Gameti
B. Kotwal
C. Patel
D. Sahlot
List-II: (Tribe)
i. Meena
ii. Bhil
iii. Garasia
iv. Saharia
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-i, C-iv, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

12. Consider the following statements regarding the Garasia tribe:
I. They are primarily concentrated in the Abu Road and Pindwara tehsils of Sirohi district.
II. They immerse the ashes of their deceased in Nakki Lake.
III. Their traditional cooperative agricultural institution is called Helru.
IV. They consider the peacock as a sacred bird.
Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) I, III and IV only
(3) II, III and IV only
(4) I, II, III and IV
(5) Question not attempted

13. Which of the following is not a dialect commonly spoken by the tribal communities in the southern belt of Rajasthan?
(1) Vagdi
(2) Bhili
(3) Malvi
(4) Mewari
(5) Question not attempted

14. Find the odd one out among the following fairs based on their association with tribal culture in Rajasthan:
(1) Baneshwar Fair
(2) Sitabari Fair
(3) Chhela Bavji Fair
(4) Pushkar Fair
(5) Question not attempted

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1559 to serve as a new capital for Mewar. Ajmer was founded much earlier by the Chauhan ruler Ajayapala.

28. (2) B.R. Patel Committee
During the integration of Rajasthan's princely states, the B.R. Patel Committee was appointed to resolve disputes regarding the location of the capital and various high-level state offices. The committee recommended Jaipur as the permanent capital of the unified state. Consequently, other important administrative departments, such as the High Court and the Revenue Board, were allocated to other major cities.

29. (2) I, II, and III
Jodhpur is the second-largest city in Rajasthan and plays a vital role in the state's judicial administration as the seat of the High Court. It is home to magnificent heritage sites like the Umaid Bhawan Palace and Jaswant Thada. However, the claim that it is a separate Union Territory is false, as Jodhpur is a district within Rajasthan.

30. (4) Ajmer - Part C State
Before the final reorganization of states in 1956, Ajmer-Merwara was administered directly by the central government as a Part C state. In contrast, Jaipur, Jodhpur, and Kota were princely states that had integrated into the Rajasthan Union earlier. After 1956, Ajmer was merged into Rajasthan, losing its separate legislative status but becoming a central district of the state.

31. (1) A city significantly larger and more economically dominant than others in the urban system.
A primate city is defined by its overwhelming dominance in size and influence within a country or region. According to urban geography theories, such a city is typically at least twice as large as the next biggest city in the hierarchy. This concentration of population, political power, and economic activity makes it the central hub for national development flows.

32. (1) I, II, III, and IV
Kota is situated along the Chambal River and serves as the administrative center for the Hadoti region. It is globally known for Kota Stone and is part of the national Smart Cities Mission. However, historically, Kota was never part of the Marwar kingdom; it was an independent princely state that emerged from the older territory of the Bundi kingdom.

33. (2) National Research Centre on Camel (NRCC)
The National Research Centre on Camel is located in Bikaner, reflecting the city's importance in the desert ecosystem. Bikaner has long been a hub for camel breeding and trade. This premier research institute focuses on improving the health and production of camels, which are vital for the livelihoods of many people in the arid and semi-arid desert regions.

34. (2) III, IV, I, II
Ajmer is the oldest among these cities, founded in the eleventh century by the Chauhan dynasty. Jodhpur followed in 1459, established by Rao Jodha. Bikaner was founded shortly after in 1488 by Rao Bika. Jaipur is the most modern of the group, having been planned and established by Sawai Jai Singh II in 1727 as a new capital.

35. (1) A-ii, B-i, C-iv, D-iii
Major cities in Rajasthan rely on specific water management systems for their needs. Jaipur is primarily supplied by the Bisalpur Dam, while Jodhpur depends on Kaylana Lake and the Rajiv Gandhi Lift Canal. Ajmer's historical supply comes from Anasagar Lake, and Kota benefits directly from the Chambal River system. These sources are critical for supporting the growing urban populations.

36. (4) It turned Ajmer into a major industrial and transport hub, spurring rapid urban growth.
The establishment of the Rajputana-Malwa Railway headquarters and locomotive workshops in the late nineteenth century fundamentally transformed Ajmer's economy. This colonial initiative brought modern industrial technology and a large labor force to the city. As a result, Ajmer evolved into a major transportation and engineering hub, leading to significant population growth and the development of new vital urban infrastructure.

37. (3) The central axis is designed around a large artificial lake serving as a protective moat.
Jaipur's walled city is famous for its grid plan, where arterial roads intersect at right angles and the area is divided into nine rectangular blocks.

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The use of pink-painted facades is another iconic feature. However, the original city plan did not include a large artificial lake as a central protective moat; instead, it utilized defensive walls and nearby hills.

38. (2) Its location on caravan routes connecting Central Asia to the western Gujarat coast.
Before the modern era, Bikaner's urban growth was driven by its strategic geographical location. It served as a vital transit hub on the ancient caravan trade routes that linked Central Asia to the busy ports of Gujarat. This commercial activity attracted wealthy merchants and financiers, fostering the city's prosperity despite the harsh environment of the surrounding arid Thar Desert.

39. (1) Both A and R are true and R is the correct explanation of A.
Jaipur exhibits the characteristics of a primate city because of its overwhelming demographic and economic dominance in Rajasthan. The city's population is significantly larger than that of Jodhpur, the second-ranked urban center. This high ratio of concentration indicates that Jaipur attracts a disproportionate amount of the state's resources, migration, and infrastructure investment, fitting the standard urban definition.

40. (1) I and II only
Kota and Sikar have gained national prominence as major hubs for students preparing for competitive entrance examinations in engineering and medicine. Kota pioneered this industry, and Sikar has recently emerged as a significant secondary center. Jaisalmer, while a major tourist destination, does not have a comparable concentration of these specialized educational institutes or a large student-based floating population.

41. (3) The largest city in a region is super-eminent in size and national influence.
Geographer Mark Jefferson introduced the Law of the Primate City to describe urban systems dominated by a single large center. According to this concept, the primate city is exceptionally large and more influential than any other city in the country or region. It serves as the primary focal point for national identity, economic activity, cultural expression, and administrative power.

42. (4) Statement I is incorrect and Statement II is correct.
Rajasthan's urban growth is not balanced across all districts; instead, it is highly concentrated in specific regional hubs. Jaipur stands out as the dominant urban center, capturing a major share of the state's total urban population and investment. This creates a primate city effect where the capital grows much faster and becomes more influential than other secondary provincial cities.

43. (3) 20 percent
According to the 2011 Census, Jaipur district accounts for approximately twenty percent of the total urban population residing in Rajasthan. This significant concentration highlights the city's role as the primary destination for migrants and the main engine of urban growth in the state. Such a high percentage underscores the demographic dominance of the capital region over other urban centers.

44. (1) I, II, and III
Migration in Rajasthan is driven by rural push factors like agricultural distress and urban pull factors like employment in the informal sector. A significant consequence of male-dominated out-migration is the feminization of agriculture, where women take over farming duties in villages. However, migration typically increases rather than reduces the population density and pressure in congested urban slum areas.

45. (3) Failure of monsoon leading to crop loss - Push Factor
Migration factors are divided into push and pull categories. Push factors are negative conditions that force people to leave their homes, such as monsoon failure leading to agricultural loss. Conversely, pull factors are positive urban attractions like better education, higher wages, and advanced medical facilities. Misidentifying urban benefits as push factors or rural hardships as pull factors is incorrect.

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46. (4) It increases the proportion of elderly, women, and children left behind in rural areas.
When working-age men migrate from rural regions like Shekhawati to cities for work, it creates a significant demographic imbalance in the source villages. This trend leaves behind a population primarily consisting of the elderly, women, and children. While remittances sent back may improve the household economy, the local rural society faces a shortage of young male labor for traditional farming.

47. (1) A-iv, B-iii, C-ii, D-i
Migration involves distinct factors and impacts on both source and destination regions. Push factors include the decline of rural handicrafts, while pull factors consist of better urban healthcare and education. The impact on source regions is often seen in a remittance-based economy. Meanwhile, destination regions frequently experience the proliferation of informal settlements and slums due to the rapid influx.

48. (2) Depletion of peri-urban agricultural lands and encroachment on drainage channels.
Unchecked urban sprawl in cities like Jaipur and Jodhpur leads to the conversion of surrounding agricultural lands into residential and commercial zones. This expansion often results in the encroachment upon natural drainage channels and water bodies, which increases the risk of urban flooding. Furthermore, the loss of vegetation and green cover negatively affects the local ecological balance and groundwater.

49. (2) Social rigidities and caste-based conflicts within rural village communities.
Pull factors are positive attributes that attract migrants to urban areas, such as employment opportunities, better infrastructure, and access to education. Social rigidities and caste-based conflicts are actually push factors, as they represent negative social conditions in rural areas that drive people to seek the perceived anonymity and social freedom of large cities rather than staying back.

50. (1) I, II, III, and V
Rapid urbanization in Rajasthan has led to several challenges, including the growth of slums and increased pressure on municipal services like water and waste management. It also expands the urban informal sector and transforms land use at the city's edge. However, these trends typically cause an increase in vehicular traffic and pollution levels rather than a decrease in these problems.

51. (2) Around 10-11 percent
Data from the 2011 Census indicates that approximately 12 percent of Rajasthan's urban population lives in areas designated as slums. These residents often live in overcrowded conditions with limited access to basic amenities like clean water and proper sanitation. Managing these informal settlements is a major challenge for urban planners and local bodies in growing cities.

52. (3) I and II only
Slums proliferate when the urban poor cannot afford houses in the formal market and when government schemes for affordable housing are insufficient. These informal settlements provide a survival mechanism for low-income migrants. While migration drives slum growth, there is no strict prohibition of rural movement into cities; in fact, free movement is a fundamental right that facilitates labor.

53. (3) Statement I is correct but Statement II is incorrect.
The Rajiv Awas Yojana was designed to create a slum-free India by integrating informal settlements into the formal urban system. It focused on providing basic amenities and legal status to slum dwellers. The scheme emphasized in-situ redevelopment rather than forced eviction or rural relocation. Thus, the idea that it mandated forced displacement to rural areas is entirely incorrect.

54. (2) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
MGNREGA is a flagship social security scheme specifically designed to provide guaranteed wage employment in rural areas to enhance livelihood security. In contrast, the Pradhan Mantri Awas Yojana (Urban), National Urban Livelihoods Mission, and AMRUT are all central government initiatives focused on improving housing, employment, and infrastructure within urban centers. Therefore, MGNREGA stands out due to its rural focus.

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55. (4) A compact, congested area with at least 300 people and poor infrastructure.
According to the Census of India, a slum is defined as a compact area inhabited by at least three hundred people living in poorly built, congested tenements. These areas typically lack proper ventilation, sanitation, and drinking water facilities. This definition is used to identify and categorize informal settlements that require targeted interventions for urban poverty alleviation and infrastructure improvement programs.

56. (1) Both A and R are true and R is the correct explanation of A.
There is a strong correlation between living in slums and working in the urban informal sector. Many slum dwellers lack the formal education and specialized technical skills required for high-paying corporate jobs. Consequently, they find employment in low-wage, unregulated activities such as street vending, domestic work, and construction labor. This economic reality traps many urban poor residents.

57. (3) 2015
The Government of India launched the Smart Cities Mission in June 2015 with the aim of promoting sustainable and inclusive urban development. The mission seeks to improve the quality of life in selected cities by providing core infrastructure, a clean environment, and the application of smart solutions. Rajasthan has been an active participant in this mission since its inception.

58. (4) I, II, III, and IV
In Rajasthan, four major cities were selected to be developed under the national Smart Cities Mission. These are Jaipur, Udaipur, Kota, and Ajmer. Each of these cities has implemented various projects focusing on improved urban mobility, waste management, and digital governance. The selection was based on a competitive process that evaluated the urban transformation plans submitted by each city.

59. (1) A-iv, B-i, C-ii, D-iii
The Smart Cities Mission employs different developmental strategies. Retrofitting improves existing areas to make them more efficient, while redevelopment involves replacing old structures with new layouts. Greenfield development focuses on building new urban areas on vacant land. Pan-city initiatives apply smart solutions, like intelligent traffic systems, across the entire city to enhance overall infrastructure and service delivery.

60. (2) Jodhpur
While Jaipur, Udaipur, Kota, and Ajmer were selected for the central government's Smart Cities Mission, Jodhpur was not included in the initial list of one hundred cities. Despite being the second-largest city in Rajasthan, Jodhpur had to rely on state-level initiatives and other central schemes like AMRUT for its urban infrastructure development and modernization projects during that specific period.

61. (3) A city-level limited company, promoted by the State and ULB, to implement projects.
For the implementation of the Smart Cities Mission, each selected city must establish a Special Purpose Vehicle. This is a limited company incorporated under the Companies Act, with the State government and the Urban Local Body as equal shareholders. The SPV is responsible for planning, executing, and monitoring the various smart city projects, ensuring professional management and financial autonomy.

62. (4) A Centrally Sponsored Scheme where Central and State governments share costs 50:50.
The funding for the Smart Cities Mission is based on a cooperative model between the federal and provincial levels. It is a centrally sponsored scheme where the financial burden is shared equally between the central government and the respective state government on a 50:50 basis. Additional funds are often mobilized through urban local bodies, public-private partnerships, and convergence schemes.

63. (3) 74th Amendment Act
The 74th Constitutional Amendment Act of 1992 provided constitutional status to urban local bodies in India. It introduced Part IXA to the Constitution and added the Twelfth Schedule, which lists eighteen functional items for municipalities. This landmark legislation aimed at decentralizing power and strengthening urban governance by ensuring regular elections

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and defining the powers and responsibilities of municipal institutions.

64. (1) A-iii, B-ii, C-i, D-iv
In Rajasthan, urban local bodies are categorized by population size. Municipal Corporations manage larger urban areas with over five lakh residents. Municipal Councils are established for smaller urban areas with populations between one and five lakhs. Municipal Boards serve transitional or small towns below one lakh. Cantonment boards are distinct units administered by the Ministry of Defence for security.

65. (2) Each of these cities has been divided into two separate Municipal Corporations (Nagar Nigams).
To improve administrative efficiency in Rajasthan's largest cities, the state government recently restructured their municipal governance. Jaipur, Jodhpur, and Kota were each divided into two separate municipal corporations, namely Heritage and Greater for Jaipur, and North and South for Jodhpur and Kota. This change was implemented to provide more focused management and better civic services to growing populations.

66. (1) I, II, III, and IV
The Twelfth Schedule of the Constitution mandates several functions for municipalities, including urban and town planning, regulation of land use, and planning for social and economic development. They are also responsible for essential services like fire services and public health. However, the management of international borders is a matter of national security and falls under the exclusive jurisdiction of the center.

67. (4) Statement I is incorrect but Statement II is correct.
In Rajasthan, the method for electing the Mayor is not fixed and has been subject to frequent changes by the state government. While mayors have sometimes been elected directly by the people, the current system generally favors an indirect election by the elected ward councilors. These amendments to the municipal laws reflect the changing political strategies regarding local governance and urban administration.

68. (4) Regulation of primary agricultural cooperative societies (PACS)
The Twelfth Schedule covers eighteen functional areas for municipalities, such as water supply, public health, sanitation, and slum improvement. These items focus strictly on urban management and welfare. The regulation of primary agricultural cooperative societies is not included in this schedule, as cooperatives are typically governed by state cooperative laws and often fall under the domain of rural departments.

69. (3) State Election Commission
The State Election Commission is the constitutional body responsible for conducting elections to local bodies, including both Panchayats and Municipalities. It handles the preparation of electoral rolls and the overall supervision of the voting process. This commission operates independently of the Election Commission of India, which focuses on national and state-level legislative elections rather than local municipal governance systems.

70. (2) Ward Committee - Chief Minister
Municipal governance in Rajasthan follows a specific hierarchy of leadership. A Mayor heads a Nagar Nigam, a Sabhapati leads a Nagar Parishad, and a Chairman is the head of a Nagar Palika. However, the Chief Minister of the state does not lead ward committees. Ward committees are local-level bodies consisting of councilors and nominated members to address neighborhood-level issues.

71. (4) Corporate Income Tax levied on multinational companies.
Urban local bodies in Rajasthan generate revenue through property taxes, user charges for services like water, and grants from the state government. These grants are often based on the recommendations of the State Finance Commission. However, corporate income tax is a central tax levied by the Government of India and is not a direct source of revenue for municipal bodies.

72. (1) Nagar Panchayat / Nagar Palika
According to the 74th Constitutional Amendment, a Nagar Panchayat or Nagar Palika is the specific type of urban local body constituted for a transitional area. This refers to

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a settlement that is currently transitioning from a rural village to an urban town. Such areas exhibit growing commercial activity and non-agricultural employment while still maintaining some characteristics of their rural origins.

73. (3) Scarcity of sustainable freshwater resources to support the growing population.
The most significant challenge to sustainable urbanization in Rajasthan's major cities is the severe shortage of freshwater. As the populations of Jaipur, Jodhpur, and Ajmer grow rapidly, the demand for water outstrips the available supply from local reservoirs and canals. Over-dependence on depleting groundwater and the high cost of bringing water from distant sources pose long-term sustainability risks.

74. (2) Master Plan, Zonal Development Plan, Local Area Plan
Urban planning involves multiple levels of spatial instruments. The Master Plan is the macro-level document providing a vision for the entire city over twenty years. Below this is the Zonal Development Plan, which details land use for specific zones within the city. Finally, the Local Area Plan is the most micro-scale instrument, focusing on the development and infrastructure of neighborhoods.

75. (4) Urban Heat Island Effect
The Urban Heat Island Effect occurs when cities become significantly warmer than their surrounding rural areas. In central Jaipur, the concentration of concrete, asphalt, and tall buildings traps heat, while the lack of vegetation prevents natural cooling. This phenomenon is a direct consequence of rapid urbanization and leads to increased energy consumption for cooling and potential health risks for residents.

76. (2) All cities in Rajasthan have successfully achieved 100 percent coverage of piped underground sewerage networks.
Rajasthan faces many urban challenges, including traffic congestion, improper waste management, and flooding due to drainage encroachment. However, the claim that all cities have achieved one hundred percent coverage of piped underground sewerage networks is incorrect. Many urban areas still rely on septic tanks or open drains, and expanding the sewerage infrastructure remains a major ongoing task for municipal authorities.

77. (3) Biodegradable, Dry (recyclables), and Domestic Hazardous (diapers, napkins) waste.
To improve municipal sanitation, the 2016 rules require households to segregate waste into three specific categories at the source. These include biodegradable waste, which can be composted; dry waste, consisting of recyclables like plastic and paper; and domestic hazardous waste, such as diapers and used napkins. Proper segregation is essential for effective solid waste management and reducing the landfill burden.

78. (4) Rajasthan Urban Infrastructure Development Project (RUIDP)
The Rajasthan Urban Infrastructure Development Project was established by the state government with support from international agencies like the Asian Development Bank. It serves as the primary mechanism for implementing and funding large-scale urban infrastructure projects, including water supply, sewerage systems, and heritage conservation. Other projects mentioned focus on rural livelihoods, agriculture, or forestry rather than urban development.

79. (1) Provide free agricultural land to urban slum dwellers in the city outskirts.
The AMRUT mission aims to ensure basic services like water supply and sewerage to every household, increase greenery through parks, and reduce pollution by improving public transport. However, providing free agricultural land to slum dwellers is not an objective of this urban rejuvenation scheme. Slum-related interventions usually focus on housing and basic amenities within the existing urban fabric.

80. (2) Transit-Oriented Development
Transit-Oriented Development is an urban planning concept that focuses on creating high-density, mixed-use communities within walking distance of public transport hubs. In cities like Jaipur, this strategy aims to reduce dependence on private vehicles, decrease traffic congestion, and promote sustainable urban growth by integrating land use with transit systems like the metro and bus rapid transit networks efficiently.

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CHAPTER 28
Tribes

1. According to the 2011 Census, which of the following closely represents the percentage of the Scheduled Tribe (ST) population in the total population of Rajasthan?
(1) 9.3 percent
(2) 13.5 percent
(3) 16.2 percent
(4) 18.1 percent
(5) Question not attempted

2. Match the major tribes of Rajasthan in List-I with their primary geographical concentration in List-II.
List-I: (Tribe)
A. Saharia
B. Garasia
C. Damor
D. Meena
List-II: (Geographical Concentration)
i. Dungarpur
ii. Baran
iii. Jaipur and Dausa
iv. Sirohi and Pali
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-iv, C-iii, D-i
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

3. Which of the following is not recognized as a Scheduled Tribe in the state of Rajasthan?
(1) Bhil
(2) Meena
(3) Santhal
(4) Garasia
(5) Question not attempted

4. Consider the following statements regarding the Meena tribe of Rajasthan:
I. They are historically divided into two primary groups known as Chaukidar Meenas and Zamindar Meenas.
II. They trace their mythical origin to Matsya Avatar, an incarnation of Lord Vishnu.
III. They are predominantly concentrated in the southern districts of Udaipur and Banswara.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

5. The famous Baneshwar Fair, often referred to as the Kumbh of the tribals, is held in which district of Rajasthan?
(1) Banswara
(2) Pratapgarh
(3) Dungarpur
(4) Udaipur
(5) Question not attempted

6. The following are districts of Rajasthan:
I. Banswara
II. Dungarpur
III. Udaipur
IV. Pratapgarh
Arrange these districts in descending order based on the percentage of their Scheduled Tribe population to their total district population as per the 2011 Census. Which of the following represents the correct sequence?
(1) I, II, IV, III
(2) I, IV, II, III
(3) II, I, IV, III
(4) III, I, II, IV
(5) Question not attempted

7. Consider the following statements regarding traditional tribal agriculture:
Statement I: 'Chimata' refers to shifting cultivation practiced by the Bhils on hilly slopes.
Statement II: 'Dajiya' refers to shifting cultivation practiced by the Bhils in plain areas.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are

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18. (1) Both Statement I and Statement II are correct and II explains I.
Jodhpur is famously called the Blue City because many houses surrounding the Mehrangarh Fort are painted in shades of indigo. Historically, this color was associated with the Brahmin community to denote their status. Additionally, the lime-based blue wash is functional in the arid desert climate as it helps reflect heat and serves as an effective insect repellent there.

19. (2) A-iv, B-i, C-ii, D-iii
Rajasthan's major cities are often identified by unique popular epithets. Jodhpur is known as the Sun City or Blue City, while Kota is celebrated as a modern educational and coaching hub. Bikaner is famously called the Camel Country due to its desert location. Ajmer is regarded as the Heart of Rajasthan and serves as a major religious center.

20. (4) Chambal
The Chambal River is the only perennial river in Rajasthan and provides a steady water supply to Kota. This abundant water resource facilitated the development of hydroelectric and thermal power plants, along with heavy chemical industries. Consequently, Kota evolved from a traditional town into a significant industrial and power-generating hub, often referred to as the state's industrial capital.

21. (1) Jaipur, Jodhpur, Kota, Bikaner
Based on the 2011 Census, Jaipur stands as the most populous city in Rajasthan. It is followed by Jodhpur, which ranks second in total population. Kota holds the third position due to its industrial and educational growth, while Bikaner is the fourth largest city. This hierarchy represents the major urban hubs that dominate the state's demographic and economic landscape today.

22. (2) 1488
The city of Bikaner was founded in 1488 by Rao Bika, a prince of the Rathore clan and son of Rao Jodha. Located in the northern part of the Thar Desert, the city was established as the capital of a new princely state. Over centuries, it became a crucial trade center and is renowned for its unique desert architecture.

23. (4) I, II, and III
Ajmer is a significant historical and religious city in Rajasthan. It houses the world-renowned Dargah of Khwaja Moinuddin Chishti and is located near Pushkar, which contains the famous Brahma Temple. Historically, Ajmer served as the capital for the Chauhan rulers before the Delhi Sultanate. These factors contribute to its status as a major center for pilgrimage and tourism.

24. (1) Both A and R are true and R is the correct explanation of A.
Kota has witnessed a unique demographic transformation characterized by a large influx of students from across India. This floating population consists of thousands of young aspirants who relocate to the city for competitive exam preparation. The emergence of world-class coaching institutes for engineering and medical entrance exams is the primary driver behind this significant social and economic shift.

25. (3) Its economy is entirely devoid of agricultural processing and is strictly based on heavy metal industries.
Bikaner's economy is actually deeply rooted in agricultural processing, especially snacks and dairy products. The city is world-famous for its Bikaneri Bhujia and sweets, which are major components of its local industry. While it was a historical trade transit point and relies on the Indira Gandhi Canal, the claim that it lacks agricultural processing and focuses on metals is incorrect.

26. (1) Large-scale offshore oil drilling
Kota's industrial economy is based on chemical plants, fertilizer production, and power generation. It is also famous for the traditional Kota Doria textile weaving industry. However, there is no offshore oil drilling in the region as Kota is a landlocked city located in the southeastern part of Rajasthan. Oil exploration in the state is primarily concentrated in the western desert districts.

27. (1) A-iii, B-i, C-ii, D-iv
The major historic cities of Rajasthan were founded by prominent rulers. Jaipur was established by Sawai Jai Singh II in 1727, while Jodhpur was founded by Rao Jodha in 1459. Udaipur was built by Maharana Udai Singh II in

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15. Consider the following statements regarding the Bhagat Movement:
I. It was initiated by Govind Giri to bring social and religious reforms among the Bhils.
II. The followers were instructed to abstain from alcohol and meat.
III. The Samp Sabha was established in 1883 to unite the tribal communities.
IV. The Mangarh hill massacre associated with this movement occurred in 1913.
V. The movement exclusively targeted the British without opposing local feudal exploitation.
Which of the above statement(s) is/are incorrect?
(1) I and III only
(2) II, IV and V only
(3) V only
(4) III and V only
(5) Question not attempted

16. The ashes of the deceased are traditionally immersed in the Nakki Lake at Mount Abu by the members of which tribe?
(1) Saharia
(2) Garasia
(3) Damor
(4) Bhil
(5) Question not attempted

17. Match the traditional tribal fairs/festivals in List-I with the corresponding tribes in List-II.
List-I: (Fair/Festival)
A. Bhagoria Festival
B. Sitabari Fair
C. Chhela Bavji Fair
D. Nakki Lake Fair
List-II: (Tribe)
i. Saharia
ii. Damor
iii. Garasia
iv. Bhil
(1) A-iv, B-i, C-ii, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-iii, B-i, C-ii, D-iv
(5) Question not attempted

18. The institution of 'Helru', a cooperative system designed to assist members in agricultural and social tasks, belongs to which tribe?
(1) Garasia
(2) Bhil
(3) Meena
(4) Saharia
(5) Question not attempted

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19. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): The Meena community launched a sustained agitation against the British and princely states in the early 20th century.
Reason (R): The colonial government enacted the Criminal Tribes Act in 1924, which mandated the daily registration of Meena men and women at local police stations.
Which of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

20. The Damor tribe of Rajasthan is heavily influenced by the culture of neighboring Gujarat and is primarily concentrated in the Simalwara Panchayat Samiti of which district?
(1) Pratapgarh
(2) Banswara
(3) Udaipur
(4) Dungarpur
(5) Question not attempted

21. In the socio-cultural context of the Bhil tribe, what does the term 'Pal' refer to?
(1) A traditional weapon used for hunting
(2) The local deity worshipped during harvests
(3) A large village or a cluster of several hamlets
(4) The bride price given during a marriage
(5) Question not attempted

22. Consider the following statements regarding the Saharia tribe:
I. They are predominantly found in the Shahbad and Kishanganj tehsils of Baran district.
II. They revere Maharishi Valmiki as their patron deity and original ancestor.
III. Historically, they were subjected to the exploitative 'Hali' system of bonded labor.

ANSWERS

1. (2) 13.5 percent
The 2011 Census indicates that Scheduled Tribes constitute a significant portion of Rajasthan's population. Specifically, they account for approximately thirteen point five percent of the total state population. This demographic is primarily concentrated in the southern and southeastern regions, contributing significantly to the state's rich cultural diversity and historical heritage through various unique tribal communities and traditions.

2. (1) A-ii, B-iv, C-i, D-iii
Tribal communities in Rajasthan are geographically distributed across specific regions based on historical and environmental factors. Saharias are primarily located in the Baran district, while the Garasia tribe is found in Sirohi and Pali. The Damor community is concentrated in Dungarpur, and the Meena tribe has a substantial presence in the eastern districts of Jaipur and Dausa.

3. (3) Santhal
Several tribal groups are officially recognized under the Scheduled Tribes list in Rajasthan to ensure social and economic protections. While the Bhil, Meena, and Garasia communities represent the largest and most well-known tribes within the state, the Santhal tribe is not historically or legally recognized as an indigenous Scheduled Tribe within the geographical boundaries of Rajasthan.

4. (1) I and II only
The Meena community is one of the most prominent tribal groups in Rajasthan, historically organized into the Chaukidar and Zamindar divisions. They claim their mythological lineage from the Matsya Avatar of Lord Vishnu. While they are found across the state, their primary concentration is in eastern districts like Jaipur rather than the southernmost districts like Udaipur.

5. (3) Dungarpur
The Baneshwar Fair is a major cultural and religious event celebrated at the confluence of the Som, Mahi, and Jakham rivers. Held annually in the Dungarpur district, it is widely regarded as the most significant gathering for tribal communities in Rajasthan. This event serves as a platform for social interaction, traditional rituals, and vibrant cultural expressions.

6. (1) I, II, IV, III
According to the 2011 Census, the concentration of Scheduled Tribes varies significantly across southern Rajasthan districts. Banswara holds the highest percentage of tribal population relative to its total inhabitants, followed closely by Dungarpur and Pratapgarh. Udaipur also maintains a substantial tribal presence, though its percentage is lower compared to these other heavily populated tribal-dominated districts in the region.

7. (1) Both Statement I and Statement II are correct.
The Bhil tribe traditionally practiced two distinct forms of shifting cultivation depending on the local terrain. The term Chimata refers specifically to agricultural activities conducted on hilly or mountainous slopes. In contrast, Dajiya describes the practice of shifting cultivation carried out in the flat, plain areas. Both methods involve clearing land to grow crops for subsistence.

8. (3) A minimum of 50 percent ST population.
The Tribal Sub-Plan is a specialized development framework aimed at improving the socio-economic status of tribal populations in specific areas. To qualify for inclusion under this plan, a geographical area must possess a Scheduled Tribe population of at least fifty percent. This criterion ensures that resources and administrative focus are directed toward regions with a significant tribal concentration.

9. (1) Both A and R are true and R is the correct explanation of A.
The Saharia tribe is recognized by the Government of India as the only Particularly Vulnerable

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Which of the above statement(s) is/are correct?
(1) I, II and III only
(2) II, III and IV only
(3) I, III and IV only
(4) I, II, III and IV
(5) Question not attempted

30. Which tribal community in Rajasthan claims its descent directly based on references from the Matsya Purana?
(1) Bhil
(2) Saharia
(3) Damor
(4) Meena
(5) Question not attempted

31. Match the tribal languages/dialects and linguistic traits in List-I with their corresponding tribes or regions in List-II.
List-I: (Language/Dialect)
A. Vagdi
B. Gujarati influence
C. Hadoti influence
D. Dhundhari influence
List-II: (Tribe/Region)
i. Damor tribe
ii. Saharia tribe
iii. Meena tribe in eastern Rajasthan
iv. Dungarpur and Banswara region
(1) A-iv, B-i, C-ii, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-iv, B-ii, C-i, D-iii
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

32. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): Unlike many other tribal communities in Rajasthan, the Damor tribe does not traditionally depend on forests for their primary livelihood.
Reason (R): The Damor tribe primarily relies on settled agriculture and animal husbandry, and forest areas are relatively sparse in their core region of concentration.
Which of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

33. Consider the following statements regarding the Scheduled Areas in Rajasthan:
I. The Fifth Schedule of the Indian Constitution deals with the administration of Scheduled Areas.
II. The Governor has the power to make regulations for the peace and good government of these areas.
III. Banswara and Dungarpur districts are fully covered under the Tribal Sub-Plan (TSP) area.
IV. The Rajasthan Tribes Advisory Council must consist of not more than twenty members.
V. Three-fourths of the members of the Tribes Advisory Council must be representatives of Scheduled Tribes in the State Legislative Assembly.
Which of the above statement(s) is/are correct?
(1) I, II, III and IV only
(2) II, III, IV and V only
(3) I, II, III, IV and V
(4) I, III and V only
(5) Question not attempted

34. In traditional Bhil society, what is the meaning of the term 'Dapa'?
(1) The practice of paying bride price to the bride's father
(2) A ritual performed to appease rain gods
(3) The traditional headgear worn by the village chief
(4) The act of resolving disputes through village elders
(5) Question not attempted

35. Which of the following districts of Rajasthan does NOT fall under the notified Tribal Sub-Plan (TSP) area?
(1) Banswara
(2) Dungarpur
(3) Jaipur
(4) Pratapgarh
(5) Question not attempted

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Which of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

50. The flowers of which tree are extensively used by the tribal communities of southern Rajasthan to prepare traditional country liquor and also consumed as a food supplement during scarcities?
(1) Mahua
(2) Tendu
(3) Khejri
(4) Sal
(5) Question not attempted

51. Based on the 2011 Census data regarding the literacy rates among the major tribal groups of Rajasthan, select the correct sequence from highest literacy to lowest literacy:
(1) Meena, Bhil, Garasia, Saharia
(2) Bhil, Meena, Saharia, Garasia
(3) Meena, Garasia, Bhil, Saharia
(4) Saharia, Garasia, Bhil, Meena
(5) Question not attempted

52. Consider the following statements regarding the Criminal Tribes Act (CTA):
Statement I: The CTA was enacted by the British to categorize entire communities, including the Meenas, as habitual offenders.
Statement II: The agitation against the CTA culminated in its complete repeal immediately after the independence of India in 1947.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

53. Consider the following traditional forms of marriage practiced by the Garasia tribe:
I. Mor Bandhiya (proper marriage with full rituals)
II. Pahravna (marriage with nominal rituals and without a Brahmin)
III. Tanna (marriage by paying bride price without formal rituals)
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

54. The ritual of 'Dhari Sanskar', which involves spreading ashes in a courtyard to interpret the footprints and predict the form of rebirth of a deceased person, is predominantly observed in which tribe?
(1) Meena
(2) Saharia
(3) Bhil
(4) Damor
(5) Question not attempted

55. Match the prominent leaders/reformers in List-I with their primary contribution or associated movement in List-II.
List-I: (Leader/Reformer)
A. Govind Giri
B. Motilal Tejawat
C. Muni Magan Sagar
D. Thakkar Bapa
List-II: (Contribution/Movement)
i. Authored Meena Purana and led Meena reforms
ii. Eki Movement
iii. Bhagat Movement and Samp Sabha
iv. Pioneered modern tribal welfare and coined the term 'Adivasi'
(1) A-iii, B-ii, C-i, D-iv
(2) A-ii, B-iii, C-iv, D-i
(3) A-iii, B-i, C-ii, D-iv
(4) A-iv, B-ii, C-i, D-iii
(5) Question not attempted

56. Which of the following is NOT an objective of the Van Dhan Yojana implemented in tribal areas?
(1) Promoting large-scale mechanized mining in forest areas
(2) Ensuring remunerative prices for minor

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(1) I and II only
(2) III and IV only
(3) IV only
(4) II and III only
(5) Question not attempted

43. What is the primary focus of the Eklavya Model Residential Schools (EMRS) established in the tribal belts of Rajasthan?
(1) To provide vocational training exclusively in forest produce processing
(2) Advanced military and paramilitary training for state youth
(3) To offer adult literacy programs for senior members of tribal communities
(4) Free modern education for ST children (Class VI-XII)
(5) Question not attempted

44. Match the unique cultural characteristics in List-I with their respective tribes in List-II.
List-I: (Cultural Characteristic)
A. Helru Institution
B. Dhari Sanskar (Belief in rebirth)
C. Chhela Bavji Fair
D. Strict division of Chaukidar and Zamindar
List-II: (Tribe)
i. Damor
ii. Saharia
iii. Garasia
iv. Meena
(1) A-iii, B-ii, C-i, D-iv
(2) A-ii, B-iii, C-iv, D-i
(3) A-iv, B-i, C-ii, D-iii
(4) A-iii, B-iv, C-i, D-ii
(5) Question not attempted

45. Which of the following is NOT a characteristic feature of the traditional tribal economy in Rajasthan?
(1) Reliance on minor forest produce collection
(2) Subsistence-level agriculture
(3) High capital-intensive industrial manufacturing
(4) Traditional animal husbandry and pastoralism
(5) Question not attempted

46. In the context of traditional Bhil architecture, what does the term 'Ku' represent?
(1) A sacred grove dedicated to the village deity
(2) A small well dug for irrigation purposes
(3) A communal storage structure for grains
(4) A traditional house built using mud, bamboo, and thatch
(5) Question not attempted

47. Consider the following statements regarding the historical challenges faced by tribes in Rajasthan:
I. Rampant exploitation by feudal lords and moneylenders led to multiple tribal uprisings.
II. The colonial forest laws severely restricted traditional tribal access to forest resources.
III. The practice of 'Begar' (forced unpaid labor) was widely imposed on tribal peasants.
IV. The Bhil revolts in the 19th century were easily suppressed without the need for military intervention.
V. High levels of illiteracy exacerbated the tribes' vulnerability to fraudulent land transfers.
Which of the above statement(s) is/are correct?
(1) I, II, III and V only
(2) II, III, IV and V only
(3) I, III, IV and V only
(4) I, II, III, IV and V
(5) Question not attempted

48. The geographical region historically known as 'Khera' or 'Kherad', encompassing parts of Jahazpur in Bhilwara and surrounding areas, is culturally associated with a mixed population of which two communities?
(1) Bhil and Garasia
(2) Meena and Bhil
(3) Saharia and Damor
(4) Garasia and Saharia
(5) Question not attempted

49. Given below are two statements, one labelled as Assertion (A) and the other labelled as Reason (R).
Assertion (A): Among all the Scheduled Tribes of Rajasthan, the Meena tribe has the highest literacy rate and the largest representation in government services.
Reason (R): The Meena tribe was included in the Particularly Vulnerable Tribal Groups (PVTGs) list, giving them exclusive reservation benefits in education and employment.

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36. Match the tribal welfare schemes/institutions in List-I with their primary objectives/target groups in List-II.
List-I: (Scheme/Institution)
A. Eklavya Model Residential Schools
B. Van Dhan Yojana
C. MADA
D. TRIFED
List-II: (Objective/Target Group)
i. Pockets of tribal concentration outside the TSP area
ii. Quality education for ST students
iii. Marketing of Minor Forest Produce
iv. Value addition and branding of forest produce
(1) A-ii, B-iv, C-i, D-iii
(2) A-iv, B-ii, C-iii, D-i
(3) A-ii, B-iii, C-iv, D-i
(4) A-i, B-ii, C-iii, D-iv
(5) Question not attempted

37. The Manikya Lal Verma Adim Jati Shodh Sansthan, a premier institute dedicated to tribal research and training in Rajasthan, is located in which city?
(1) Jaipur
(2) Jodhpur
(3) Udaipur
(4) Banswara
(5) Question not attempted

38. Consider the following forest products:
I. Mahua flowers
II. Tendu leaves
III. Teak timber
Which of the above form the primary non-timber forest produce (NTFP) collected by the tribals in southern Rajasthan for sustenance and income?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

39. The Vagdi dialect, heavily influenced by Gujarati and historically associated with the Bhil population, is predominantly spoken in which region?
(1) Marwar region
(2) Hadoti region
(3) Mewat region
(4) Vagad region
(5) Question not attempted

40. Which of the following represents the correct chronological sequence of the enactment of legislative measures aimed at securing tribal and forest rights in India?
(1) Scheduled Tribes and Other Traditional Forest Dwellers Act, Panchayats (Extension to Scheduled Areas) Act, Wildlife Protection Act
(2) Wildlife Protection Act, Panchayats (Extension to Scheduled Areas) Act, Scheduled Tribes and Other Traditional Forest Dwellers Act
(3) Panchayats (Extension to Scheduled Areas) Act, Wildlife Protection Act, Scheduled Tribes and Other Traditional Forest Dwellers Act
(4) Wildlife Protection Act, Scheduled Tribes and Other Traditional Forest Dwellers Act, Panchayats (Extension to Scheduled Areas) Act
(5) Question not attempted

41. Which of the following is recognized as the most significant historical cause of land alienation among the tribal communities of Rajasthan?
(1) Voluntary donation of land for industrial setups
(2) Mass migration of tribals to urban centers abandoning their lands
(3) Heavy indebtedness to local moneylenders leading to land transfer
(4) Frequent natural disasters destroying arable land completely
(5) Question not attempted

42. Consider the following statements regarding the traditional categories within the Meena tribe:
I. Chaukidar Meenas historically served as guards for villages and treasuries.
II. Zamindar Meenas were primarily engaged in settled agriculture and animal husbandry.
III. Chaukidar Meenas claim a higher social status compared to Zamindar Meenas.
IV. Both groups strictly followed the rules imposed by the Criminal Tribes Act without resistance.
Which of the above statement(s) is/are incorrect?

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forest produce
(3) Providing skill upgradation and capacity building for tribal gatherers
(4) Establishing primary processing and value addition centers
(5) Question not attempted

57. Which of the following represents the most critical, immediate health and livelihood challenge historically faced by the Saharia tribe of Baran, prompting specific governmental nutritional interventions?
(1) High prevalence of lifestyle diseases like diabetes
(2) Respiratory illnesses due to industrial pollution
(3) Severe malnutrition and starvation deaths
(4) High incidence of occupational hazards in IT sectors
(5) Question not attempted

58. Consider the following statements regarding the Damor tribe:
I. They are considered to have migrated from the neighboring regions of Gujarat.
II. Unlike many other tribes, they rely heavily on agriculture rather than forest resources.
III. Polygamy is strictly prohibited in their customary laws.
IV. Their dialect shows a strong influence of Gujarati.
Which of the above statement(s) is/are correct?
(1) I, II and IV only
(2) I, III and IV only
(3) II, III and IV only
(4) I, II, III and IV
(5) Question not attempted

59. The Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA) is a landmark legislation for tribal empowerment. Which of the following is a key power granted to the Gram Sabha under PESA?
(1) The power to veto state legislation on major minerals
(2) The authority to recruit police personnel in Scheduled Areas
(3) The right to collect corporate taxes in tribal regions
(4) The ownership of minor forest produce
(5) Question not attempted

60. The traditional attire called 'Kachhabu', which is a skirt reaching up to the knees, is typically worn by the women of which tribe?
(1) Saharia
(2) Bhil
(3) Garasia
(4) Damor
(5) Question not attempted

61. The 'Halma' or 'Hida' tradition, recognized for promoting collective community participation to help individuals in agricultural tasks or house construction, is a proud heritage of which tribal community?
(1) Saharia
(2) Meena
(3) Bhil
(4) Damor
(5) Question not attempted

62. Consider the following statements regarding the geographical concentration of tribes in Rajasthan:
I. Over two-thirds of the state's tribal population is concentrated in the southern and south-eastern districts.
II. Udaipur has the highest absolute number of Scheduled Tribes in the state.
III. Nagaur and Bikaner districts have the lowest proportion of tribal population in the state.
IV. Pratapgarh is fully included in the Tribal Sub-Plan (TSP) area.
V. The Saharia tribe is almost exclusively concentrated in the western desert districts.
Which of the above statement(s) is/are correct?
(1) I, II, III and IV only
(2) I, III, IV and V only
(3) II, III, IV and V only
(4) I, II, IV and V only
(5) Question not attempted

63. Which of the following historical movements is NOT associated with the tribal communities of Rajasthan?
(1) Santhal Rebellion
(2) Bhagat Movement
(3) Eki Movement
(4) Meena Agitation
(5) Question not attempted

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Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II and III
(5) Question not attempted

23. The Sitabari Fair, which holds immense religious and cultural significance as the principal fair of the Saharia tribe, is associated with which prominent figure from Indian mythology?
(1) Lord Ram
(2) Lord Krishna
(3) Parashurama
(4) Maharishi Valmiki
(5) Question not attempted

24. Match the traditional tribal terms in List-I with their socio-cultural meanings in List-II.
List-I: (Tribal Term)
A. Totem (Devrak)
B. Dapa
C. Dakan
D. Chheda Fadna
List-II: (Meaning)
i. Bride price
ii. Clan deity or sacred symbol
iii. Customary divorce
iv. Witchcraft belief
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

25. Determine the correct chronological order of the following historical events related to tribal movements in Rajasthan, from earliest to latest:
I. Formation of the Samp Sabha by Govind Giri
II. Enactment of the Criminal Tribes Act affecting Meenas
III. The Mangarh Hill Massacre
IV. Initiation of the Eki Movement by Motilal Tejawat
(1) I, III, IV, II
(2) I, IV, III, II
(3) III, I, IV, II
(4) IV, I, III, II
(5) Question not attempted

26. Under the tribal welfare programs in Rajasthan, what does the acronym MADA stand for?
(1) Modified Area Development Approach
(2) Marginal Area Development Agency
(3) Micro Agriculture Development Association
(4) Minimum Area Development Authority
(5) Question not attempted

27. Consider the following statements regarding tribal economy initiatives:
Statement I: The Van Dhan Yojana aims to improve tribal incomes through value addition of Minor Forest Produce (MFP).
Statement II: TRIFED acts as the nodal agency at the national level to implement the Van Dhan Yojana.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

28. Which of the following is the most direct consequence of widespread land alienation and heavy indebtedness among the tribal populations of southern Rajasthan?
(1) Rapid industrialization of tribal belts
(2) High rates of seasonal out-migration for manual labor
(3) Transition to capital-intensive cash crop farming
(4) Complete abandonment of minor forest produce collection
(5) Question not attempted

29. Consider the following statements regarding the Eki Movement:
I. It was launched by Motilal Tejawat in 1921.
II. The movement began from Matrikundiya in Chittorgarh.
III. It aimed to unite the Bhils and Garasias against arbitrary taxes and forced labor (begar).
IV. Tejawat presented a list of 21 demands known as "Mewar Pukar" to the Maharana of Mewar.

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(4) Kalka Mata — Garasia
(5) Question not attempted

73. The Baneshwar Fair is held at the sacred confluence of which three rivers in the Dungarpur district?
(1) Banas, Chambal, and Seep
(2) Luni, Sukri, and Jawai
(3) Som, Mahi, and Jakham
(4) Sabarmati, Wakal, and Sei
(5) Question not attempted

74. Which of the following statements correctly highlights the educational disparity in the Tribal Sub-Plan (TSP) areas of Rajasthan compared to the state average?
(1) Literacy in TSP areas is lower than state average
(2) Literacy rates in TSP areas exceed the general state average
(3) Female literacy in TSP areas matches male literacy outcomes
(4) Full gross enrollment is achieved at the secondary school level
(5) Question not attempted

75. In the traditional village administration of the Saharia tribe, the village headman is known by which title?
(1) Gameti
(2) Mukhi
(3) Patel
(4) Kotwal
(5) Question not attempted

76. Linguistically, the Bhili language spoken by the tribal population in southern Rajasthan belongs to which broad language family?
(1) Dravidian
(2) Indo-Aryan
(3) Austroasiatic
(4) Sino-Tibetan
(5) Question not attempted

77. Which of the following best describes the core mandate of the Tribal Cooperative Marketing Development Federation of India (TRIFED) in relation to the tribal economy?
(1) Distribution of heavy machinery for tribal farming units
(2) Management of internal security within local Scheduled Areas
(3) Fair prices for minor forest produce collection
(4) Allocation of land titles to forest-dwelling tribal groups
(5) Question not attempted

78. Which of the following statements about the initiation of the Eki Movement is correct?
(1) It was launched in 1883 from Mangarh Hill by Govind Giri.
(2) It was initiated in 1944 by Muni Magan Sagar in Neem Ka Thana.
(3) It was spearheaded by Manikya Lal Verma in Udaipur in 1938.
(4) It was started in 1921 from Matrikundiya in Chittorgarh by Motilal Tejawat.
(5) Question not attempted

79. Surji Bhagat was a prominent associate and key figure in which of the following tribal movements?
(1) Bhagat Movement
(2) Eki Movement
(3) Meena Rebellion
(4) Lalsodia Movement
(5) Question not attempted

80. The administration of Scheduled Areas and Scheduled Tribes in states other than Assam, Meghalaya, Tripura, and Mizoram is provided under which article of the Indian Constitution, directly impacting the tribal belt of Rajasthan?
(1) Article 244(2)
(2) Article 244(1)
(3) Article 275(1)
(4) Article 330
(5) Question not attempted

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64. What has been the primary socio-economic impact of the strict enforcement of forest conservation laws and the ban on shifting cultivation in the tribal belts of Rajasthan?
(1) Universal poverty eradication across tribal village clusters
(2) Settled agriculture and wage labor transitions
(3) Immediate return to hunter-gatherer lifestyles in remote belts
(4) Major career transitions into high-tech software industries
(5) Question not attempted

65. Identify the odd one out among the following traditional dances, which is generally NOT classified as a Bhil tribal dance:
(1) Gavri
(2) Kathak
(3) Gair
(4) Dwichakri
(5) Question not attempted

66. What was the central ideological purpose behind the establishment of the Samp Sabha by Govind Giri?
(1) Socio-religious reforms and internal unity for Bhils
(2) Organizing armed insurrections against the Maharana of Mewar
(3) Establishing a separate sovereign state for tribal communities
(4) Negotiating tribal recruitment into the British Indian Army
(5) Question not attempted

67. The famous 'Chaitra Vichitra' fair is a prominent cultural event organized by which tribe in the Sirohi district?
(1) Saharia
(2) Meena
(3) Garasia
(4) Damor
(5) Question not attempted

68. In the context of tribal exploitation in Rajasthan, the term 'Hali System' historically referred to which of the following?
(1) Community-driven rainwater harvesting for agricultural use
(2) Sharing agricultural tools through cooperative institutions
(3) Traditional judicial methods for resolving village conflicts
(4) Bonded labor system to repay hereditary debts
(5) Question not attempted

69. Which two tehsils of the Baran district account for nearly the entire population of the Saharia tribe in Rajasthan?
(1) Anta and Mangrol
(2) Atru and Chhabra
(3) Shahbad and Kishanganj
(4) Baran and Chhabra
(5) Question not attempted

70. Consider the following statements regarding tribal health issues:
Statement I: Sickle Cell Anemia is a genetic blood disorder that disproportionately affects tribal populations in southern Rajasthan.
Statement II: The Government of India has launched a National Sickle Cell Anemia Elimination Mission targeting these specific tribal belts.
Which of the above statement(s) is/are correct?
(1) Both Statement I and Statement II are correct.
(2) Both Statement I and Statement II are incorrect.
(3) Statement I is correct but Statement II is incorrect.
(4) Statement I is incorrect but Statement II is correct.
(5) Question not attempted

71. According to the 2011 Census, which district in Rajasthan possesses the highest Scheduled Tribe population in terms of absolute numbers?
(1) Banswara
(2) Udaipur
(3) Dungarpur
(4) Pratapgarh
(5) Question not attempted

72. Identify the incorrect pair from the following matching of tribal deities/figures and the respective tribes:
(1) Valmiki — Saharia
(2) Bhanwar Mata — Damor
(3) Bhujia/Bhuriya Baba — Meena

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Tribal Group in Rajasthan. This classification is based on specific developmental indicators, including the use of pre-agricultural technology and extremely low literacy levels. Furthermore, the community faces challenges such as stagnant population growth, necessitating targeted government interventions for their survival and socio-economic upliftment.

10. (1) Bhil
The Gavri dance-drama is a unique and significant cultural tradition performed exclusively by men from the Bhil tribe. This ritualistic performance spans forty days and is deeply rooted in religious mythology, honoring Lord Shiva and Goddess Gauri. It combines music, dance, and theatrical elements, serving as a vital medium for storytelling and community bonding within the tribal society.

11. (1) A-ii, B-iv, C-i, D-iii
Traditional tribal societies in Rajasthan utilize specific titles for their village or community leaders to maintain social order and administrative functions. The Bhil headman is typically called a Gameti, while the Saharia community uses the title Kotwal. Meena villages are often led by a Patel, and the Garasia tribe identifies their prominent community leaders using the traditional term Sahlot.

12. (4) I, II, III and IV
The Garasia tribe resides primarily in the hilly terrains of Sirohi and Pali districts. They maintain unique cultural practices, such as immersing the ashes of deceased relatives in Nakki Lake. Their society is supported by cooperative institutions like Helru for collective agricultural work. Additionally, they hold a deep spiritual reverence for nature, specifically considering the peacock a sacred bird.

13. (3) Malvi
Southern Rajasthan is home to several distinct dialects used by tribal communities, including Vagdi, Bhili, and Mewari. These languages reflect the local cultural heritage and geographical proximity to neighboring states. However, Malvi is primarily associated with the Malwa region of Madhya Pradesh and the southeastern parts of Rajasthan, rather than being a core dialect of the southern tribal belt.

14. (4) Pushkar Fair
Rajasthan hosts various fairs that are deeply integrated with tribal traditions and religious beliefs. The Baneshwar Fair, Sitabari Fair, and Chhela Bavji Fair are specifically significant to tribal groups like the Bhils, Saharias, and Damors. In contrast, the Pushkar Fair is a world-renowned cultural and livestock event that, while inclusive, is not categorized primarily as a tribal fair.

15. (3) V only
Govind Giri initiated the Bhagat Movement to promote social and religious reforms, emphasizing abstinence from alcohol and meat. He established the Samp Sabha in 1883 to unify tribal communities against various forms of exploitation. While the movement challenged British authority, it also directly opposed local feudal oppression and arbitrary taxes, rather than focusing exclusively on the colonial government alone.

16. (2) Garasia
The Garasia tribe possesses unique funerary customs that distinguish their community from other tribal groups in Rajasthan. One of their most significant traditions involves the immersion of the ashes of the deceased into the waters of Nakki Lake, located in Mount Abu. This practice is deeply rooted in their spiritual beliefs regarding the afterlife and the sacredness of nature.

17. (1) A-iv, B-i, C-ii, D-iii
Cultural festivals in Rajasthan are closely linked to specific tribal identities and geographical regions. The Bhagoria festival is a traditional celebration for the Bhil tribe, while the Sitabari Fair is the most important gathering for Saharias. The Chhela Bavji Fair is central to the Damor community, and the Nakki Lake Fair is a significant event for the Garasia tribe.

18. (1) Garasia
The Garasia tribe utilizes a unique traditional cooperative system known as Helru to foster community support and social cohesion. This institution plays a vital role in organizing collective efforts for various agricultural activities, house construction, and social ceremonies. By working together through Helru, community members ensure that essential tasks

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are completed efficiently while strengthening the internal bonds within their society.

19. (1) Both A and R are true and R is the correct explanation of A.
The Meena community engaged in a long-standing struggle against the British and local princely states during the early twentieth century. This resistance was primarily triggered by the enactment of the Criminal Tribes Act in 1924. This discriminatory law forced Meena individuals to report daily to police stations, leading to widespread social unrest and organized movements to secure their civil rights.

20. (4) Dungarpur
The Damor tribe is a smaller tribal group in Rajasthan that shows significant cultural similarities with the neighboring state of Gujarat. They are predominantly concentrated in the Simalwara region of the Dungarpur district. Unlike many other tribes that rely on forest resources, the Damors are largely settled agriculturists who have integrated various regional customs into their traditional social structures.

21. (3) A large village or a cluster of several hamlets
In the traditional social organization of the Bhil tribe, residential settlements are categorized based on their size and structure. The term Pal refers to a large village or a collection of multiple small hamlets situated in the hilly or forested terrains. These settlements are often led by a headman and serve as the primary units for social and administrative activities.

22. (4) I, II and III
The Saharia tribe is almost exclusively found in the Shahbad and Kishanganj tehsils of the Baran district. They trace their ancestry to Maharishi Valmiki and regard him as their patron deity. Historically, the community suffered from the oppressive Hali system of bonded labor, reflecting the severe socio-economic challenges they faced before modern welfare interventions were introduced by the government.

23. (4) Maharishi Valmiki
The Sitabari Fair, held in the Baran district, is the most revered cultural and religious event for the Saharia community. This fair is dedicated to Maharishi Valmiki, whom the Saharias consider their original ancestor and patron saint. The site is historically associated with episodes from the Ramayana, making it a place of deep spiritual significance for the entire tribe.

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24. (1) A-ii, B-i, C-iv, D-iii
Traditional tribal cultures in Rajasthan are characterized by unique social practices and terminology. The term Totem or Devrak refers to sacred symbols or clan deities. Dapa is the customary practice of paying a bride price. Dakan refers to traditional beliefs surrounding witchcraft, while Chheda Fadna is a symbolic ritual used to formalize a divorce within several tribal communities.

25. (1) I, III, IV, II
Tribal movements in Rajasthan followed a significant historical sequence beginning with Govind Giri's formation of the Samp Sabha in 1883. This was followed by the tragic Mangarh Hill Massacre in 1913. Later, Motilal Tejawat launched the Eki Movement in 1921 to unite the tribes. Finally, the colonial government enacted the Criminal Tribes Act affecting the Meena community in 1924.

26. (1) Modified Area Development Approach
The Modified Area Development Approach is a specific government strategy designed to assist tribal populations living outside the designated Tribal Sub-Plan areas. It focuses on small pockets of tribal concentration to provide targeted developmental benefits and infrastructure. This approach ensures that even scattered tribal communities receive adequate support for education, health, and economic empowerment through specialized schemes.

27. (1) Both Statement I and Statement II are correct.
The Van Dhan Yojana is a central initiative aimed at increasing the income of tribal forest dwellers through value addition and marketing of minor forest products. The Tribal Cooperative Marketing Development Federation of India serves as the national nodal agency for its implementation. This program empowers tribal gatherers by establishing processing centers and providing training to enhance market value.

28. (2) High rates of seasonal out-migration for manual labor
Widespread land alienation and chronic indebtedness have severely impacted the traditional livelihoods of tribal communities in southern Rajasthan. As families lose their agricultural land to moneylenders or face economic distress, many are forced to seek alternative employment. This has led to high rates of seasonal out-migration, where tribal members travel to cities or other states for manual labor.

29. (4) I, II, III and IV
Motilal Tejawat launched the Eki Movement in 1921 from Matrikundiya to unify Bhils and Garasias against feudal oppression and forced labor. As a central part of this protest, he presented a comprehensive list of twenty-one grievances known as Mewar Pukar to the Maharana of Mewar. The movement represented a significant step toward tribal political awakening and social justice.

30. (4) Meena
The Meena tribe of Rajasthan claims a prestigious mythological lineage, asserting that they are direct descendants of the Matsya Avatar, or the fish incarnation of Lord Vishnu. This claim is based on references within the Matsya Purana, one of the eighteen major Puranas. This cultural identity is central to the community's social status and historical narratives within the state.

31. (1) A-iv, B-i, C-ii, D-iii
Tribal dialects in Rajasthan are heavily influenced by the languages of neighboring regions. Vagdi is spoken in Dungarpur and Banswara, while the Damor dialect shows strong Gujarati influences. The Saharia community's speech is impacted by Hadoti due to their location in Baran. Similarly, the Meena tribe in eastern Rajasthan speaks dialects that reflect the linguistic characteristics of the Dhundhari-speaking region.

32. (1) Both A and R are true and R is the correct explanation of A.
The Damor tribe is unique among Rajasthan's tribal groups because they do not rely primarily on forest-based livelihoods. Instead, they have historically focused on settled agriculture and animal husbandry. This economic shift is largely due to their concentration in regions where dense forests are relatively sparse, prompting the community to adapt to a farming-based economy influenced by neighboring practices.

33. (3) I, II, III, IV and V
The administration of Scheduled Areas is governed by the Fifth Schedule, granting the Governor specific powers for local governance. Districts like Banswara and Dungarpur are fully covered under the Tribal Sub-Plan area. Furthermore, the Tribes Advisory Council, consisting of up to twenty members, must have three-fourths representation from Scheduled Tribe members of the State Legislative Assembly for effective participation.

34. (1) The practice of paying bride price to the bride's father
Dapa is a traditional social custom practiced within the Bhil community, involving the payment of a bride price by the groom's family to the father of the bride. This practice reflects the social value placed on women within the tribal structure. It is a formal part of the marriage process and is widely recognized across various sub-groups of the tribe.

35. (3) Jaipur
The Tribal Sub-Plan area in Rajasthan is specifically designed to include districts and blocks with high concentrations of Scheduled Tribes to ensure targeted development. While Banswara, Dungarpur, and Pratapgarh are fully or significantly covered under this plan due to their large tribal populations, Jaipur district is not part of the notified TSP area, despite having a significant Meena population.

36. (1) A-ii, B-iv, C-i, D-iii
Various institutional frameworks support tribal development in Rajasthan. Eklavya Model Residential Schools focus on providing quality education to tribal students. The Van Dhan Yojana promotes the value addition of forest produce. The Modified Area Development Approach targets tribal pockets outside the main sub-plan areas, while TRIFED works at the national level to improve the marketing of minor forest produce.

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73. (3) Som, Mahi, and Jakham
The Baneshwar Fair, often called the Kumbh of the tribals, takes place at a sacred site in the Dungarpur district. This location is precisely at the Triveni Sangam, or the confluence of three rivers: the Som, the Mahi, and the Jakham. This geographical feature adds to the religious sanctity of the fair, where thousands of tribals gather for rituals and social interaction.

74. (1) Literacy in TSP areas is lower than state average
Despite various government initiatives and the establishment of schools, literacy rates in the Tribal Sub-Plan areas of Rajasthan continue to remain below the overall state average. This educational disparity is particularly pronounced among female tribal members. Factors such as geographical isolation, economic hardships, and language barriers contribute to lower enrollment and higher dropout rates compared to the non-tribal regions.

75. (4) Kotwal
In the traditional social and administrative structure of the Saharia tribe, the village headman plays a crucial role in maintaining order and resolving disputes. He is traditionally known by the title Kotwal. This position is highly respected, and the Kotwal is responsible for representing the village's interests during broader tribal gatherings and ensuring that the community follows established social customs.

76. (2) Indo-Aryan
The Bhili language, which is spoken by the Bhil tribe across southern Rajasthan and neighboring states, belongs to the Indo-Aryan language family. While it possesses unique vocabulary and grammatical features influenced by the tribal context, its linguistic roots are shared with other major north Indian languages. It serves as a vital medium for oral traditions, folk songs, and daily communication within the community.

77. (3) Fair prices for minor forest produce collection
The Tribal Cooperative Marketing Development Federation of India was established to protect tribal people from exploitation by middlemen. Its core mandate is to ensure that tribal gatherers receive fair and remunerative prices for minor forest produce and handcrafted products. By providing marketing support and infrastructure, TRIFED helps integrate tribal economies into the larger market while preserving their traditional skills.

78. (4) It was started in 1921 from Matrikundiya in Chittorgarh by Motilal Tejawat.
The Eki Movement was a pivotal event in the history of tribal resistance in Rajasthan. It was initiated in 1921 by Motilal Tejawat, beginning at the sacred site of Matrikundiya in the Chittorgarh district. The movement aimed to unify various tribal groups, particularly the Bhils and Garasias, to collectively protest against the high taxes and oppressive feudal systems.

79. (1) Bhagat Movement
Surji Bhagat was a key associate of Govind Giri and played a significant role in the Bhagat Movement. This movement was primarily focused on the social and religious reform of the Bhil tribe during the late nineteenth and early twentieth centuries. Surji Bhagat helped spread the movement's message of temperance, vegetarianism, and spiritual awakening, contributing to the widespread unity of tribal communities.

80. (2) Article 244(1)
The administration of Scheduled Areas and Scheduled Tribes in Rajasthan is governed by Article 244 clause one of the Indian Constitution. This provision brings such areas under the Fifth Schedule, providing a special administrative framework that differs from the rest of the state. It grants the Governor specific powers to modify laws to protect the interests and unique cultural identity of tribal populations.

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manufacturing is not a characteristic feature of their traditional economic structure, as their livelihoods are generally rooted in more labor-intensive and forest-dependent agricultural practices.

46. (4) A traditional house built using mud, bamboo, and thatch
In the architectural traditions of the Bhil tribe, the term Ku refers to a typical family dwelling. These houses are generally constructed using locally available natural materials such as mud for walls, bamboo for structural support, and thatch or handmade tiles for roofing. They are often built on elevated ground or hill slopes to provide protection and a clear view of surroundings.

47. (1) I, II, III and V only
Tribal communities in Rajasthan historically faced numerous challenges, including exploitation by feudal lords and the imposition of forced labor known as Begar. Colonial forest laws further restricted their traditional access to resources, while low literacy made them vulnerable to land fraud. Although the Bhils revolted against these injustices, their uprisings were significant and often required substantial military force to suppress.

48. (2) Meena and Bhil
The geographical region historically identified as Khera or Kherad covers parts of Jahazpur in the Bhilwara district and its surrounding areas. This region is known for its culturally integrated population, primarily consisting of the Meena and Bhil communities. Their shared presence has led to a unique cultural landscape characterized by a blend of tribal traditions, social customs, and local dialects.

49. (3) A is true but R is false.
Among the various Scheduled Tribes in Rajasthan, the Meena community has achieved the highest literacy rates and maintains a strong presence in government administrative services. However, this success is not because they are classified as a Particularly Vulnerable Tribal Group. In fact, the Saharia tribe is the only group in the state officially designated with that specific vulnerable status.

50. (1) Mahua
The Mahua tree is of immense cultural and economic importance to the tribal communities residing in southern Rajasthan. Its flowers are traditionally fermented to produce a local spirit and are also dried and consumed as a nutritional food supplement during times of scarcity. Almost every part of the tree is utilized, making it a vital resource for tribal sustenance and traditional life.

51. (1) Meena, Bhil, Garasia, Saharia
Educational attainment varies among the major tribal groups in Rajasthan according to 2011 Census data. The Meena tribe holds the highest literacy rate, reflecting their early integration into modern educational and administrative systems. They are followed by the Bhil and Garasia communities. The Saharia tribe, designated as a particularly vulnerable group, currently has the lowest literacy rate among these major tribes.

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52. (3) Statement I is correct but Statement II is incorrect.
The Criminal Tribes Act was a discriminatory British law that categorized certain communities, including the Meenas, as habitual criminals based on their birth. While the act was heavily contested, it was not repealed immediately in 1947. Instead, the process of denotifying these tribes occurred a few years later, specifically in 1952, after sustained political and social advocacy for tribal rights.

53. (4) I, II and III
The Garasia tribe recognizes several traditional forms of marriage that cater to different social and economic circumstances. Mor Bandhiya is a formal marriage involving full Vedic rituals. Pahravna involves simplified rituals conducted without a Brahmin priest, while Tanna is a practice where a bride price is paid to formalize the union without elaborate ceremonies. All three are valid within their customary law.

54. (2) Saharia
The Dhari Sanskar is a unique funerary ritual practiced predominantly by the Saharia tribe of Rajasthan. Following a death, ashes are spread on the floor and covered overnight. The footprints or marks found in the ashes the next morning are carefully interpreted by community elders to

predict the form of rebirth the deceased soul will take in its next life.

55. (1) A-iii, B-ii, C-i, D-iv
Several reformers have shaped tribal history in Rajasthan. Govind Giri led the Bhagat Movement, while Motilal Tejawat spearheaded the Eki Movement. Muni Magan Sagar wrote the Meena Purana to foster community pride and reform. Thakkar Bapa, a pioneer in modern tribal welfare, is credited with coining the term Adivasi to describe India's indigenous populations and advocating for their rights.

56. (1) Promoting large-scale mechanized mining in forest areas
The Van Dhan Yojana is specifically designed to empower tribal communities by focusing on the sustainable use of forest resources. Its objectives include ensuring fair prices for minor forest produce, providing skill training for gatherers, and establishing local processing units. However, promoting large-scale mechanized mining is not part of its mandate, as such activities often conflict with forest conservation and tribal rights.

57. (3) Severe malnutrition and starvation deaths
The Saharia tribe in the Baran district has historically faced extreme poverty and food insecurity, leading to critical health crises. They have been particularly vulnerable to severe malnutrition and, in some periods, starvation deaths. These tragic circumstances prompted the government to implement specialized nutritional programs and food security interventions to protect this particularly vulnerable tribal group from further health-related distress.

58. (1) I, II and IV only
The Damor tribe has historical ties to Gujarat, which is reflected in their cultural practices and linguistic traits. They are primarily settled agriculturists who do not depend heavily on forest resources. While they maintain many unique traditions, polygamy is actually permitted within their customary laws, unlike the suggestion of a strict prohibition. Their dialect continues to show a strong Gujarati influence.

59. (4) The ownership of minor forest produce
The Panchayats (Extension to Scheduled Areas) Act of 1996 is a transformative law that grants significant autonomy to tribal communities. One of its most important provisions is the vesting of ownership rights over minor forest produce in the local Gram Sabha. This empowers tribal residents to manage, collect, and sell forest resources, thereby strengthening their local economy and ensuring sustainable resource management.

60. (2) Bhil
Traditional clothing serves as a distinct marker of tribal identity in Rajasthan. The Kachhabu is a specific garment consisting of a knee-length skirt traditionally worn by women of the Bhil tribe. This attire is designed for practicality in the hilly and forested terrains where the community resides. It is often paired with vibrant colors and traditional silver jewelry during cultural festivities.

61. (3) Bhil
The Halma or Hida tradition is a remarkable example of community cooperation found within the Bhil tribe. This custom involves village members coming together to provide free labor and support to an individual family for tasks like harvesting crops or building a house. This practice emphasizes social unity and mutual aid, ensuring that no member of the community faces a difficult task alone.

62. (1) I, II, III and IV only
Rajasthan's tribal population is largely concentrated in the southern districts, with Udaipur having the highest absolute number of Scheduled Tribes. Banswara, Dungarpur, and Pratapgarh also show high tribal densities. Conversely, western districts like Bikaner and Nagaur have very low tribal proportions. However, the Saharia tribe is located in the eastern Baran district, not in the western desert regions of the state.

63. (1) Santhal Rebellion
The Bhagat and Eki movements, along with various Meena agitations, are central to the history of tribal resistance and social reform within Rajasthan. These movements addressed local issues like feudal exploitation and discriminatory laws. In contrast, the Santhal Rebellion was a major tribal uprising that took place in the mid-nineteenth century in the eastern regions of Bihar and present-day Jharkhand.

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64. (2) Settled agriculture and wage labor transitions
The enforcement of modern forest conservation laws and the prohibition of traditional shifting cultivation have fundamentally changed tribal livelihoods in Rajasthan. These restrictions forced many tribal groups to abandon their semi-nomadic farming practices. As a result, there has been a significant transition toward settled agriculture on fixed plots of land and an increasing reliance on seasonal wage labor for survival.

65. (2) Kathak
The Bhil tribe is well-known for its vibrant folk dances like Gavri, Gair, and Dwichakri, which are performed during religious festivals and social gatherings. These dances are deeply rooted in their local tribal culture and mythology. In contrast, Kathak is a highly stylized classical dance form of northern India that evolved in royal courts and is not categorized as a tribal folk dance.

66. (1) Socio-religious reforms and internal unity for Bhils
Govind Giri founded the Samp Sabha in 1883 with the primary goal of bringing about socio-religious reforms within the Bhil community. The organization encouraged members to give up social evils, follow ethical practices, and maintain internal unity. While it eventually challenged oppressive taxes and feudal authority, its ideological core was centered on the spiritual and social upliftment of the tribal people.

67. (3) Garasia
The Chaitra Vichitra fair is a significant cultural event celebrated by the Garasia tribe in the Sirohi district of Rajasthan. Held annually, this fair provides a vibrant platform for tribal youth to meet and for the community to engage in traditional music and dance. It is considered one of the most important social gatherings for the Garasias, reflecting their unique heritage and customs.

68. (4) Bonded labor system to repay hereditary debts
The Hali system was an exploitative practice historically prevalent in parts of Rajasthan, where individuals were forced into bonded labor to repay debts. Often, these debts were hereditary, passing from one generation to the next. This system particularly affected vulnerable tribal groups like the Saharias, keeping them in a cycle of perpetual poverty and servitude until legal reforms abolished such forced labor practices.

69. (3) Shahbad and Kishanganj
The Saharia tribe, Rajasthan's only Particularly Vulnerable Tribal Group, is almost entirely localized within two specific tehsils of the Baran district. These tehsils, Shahbad and Kishanganj, contain the overwhelming majority of the Saharia population. This high degree of geographical concentration allows the government to implement targeted developmental and nutritional programs specifically designed to meet the unique needs of this community.

70. (1) Both Statement I and Statement II are correct.
Sickle Cell Anemia is a significant genetic health challenge that disproportionately affects tribal communities in southern Rajasthan. Due to its prevalence in these specific belts, the Government of India has initiated a national mission to eliminate the disorder through screening, counseling, and specialized medical care. This targeted health intervention aims to improve the overall health outcomes and quality of life for the tribal population.

71. (2) Udaipur
According to data from the 2011 Census, Udaipur district has the largest absolute number of Scheduled Tribe residents in Rajasthan. The district's rugged terrain and forested areas have historically provided a home for large Bhil and Garasia populations. This high absolute number makes Udaipur a critical center for tribal administration, research, and the implementation of various state and central welfare schemes.

72. (4) Kalka Mata — Garasia
Tribal groups in Rajasthan revere specific deities that are central to their cultural identity. The Saharias follow Maharishi Valmiki, and the Meena community deeply respects Bhuriya Baba. While various tribes worship regional goddesses, Kalka Mata is not specifically identified as the primary patron deity of the Garasia tribe. Identifying these unique religious associations is essential for understanding the diverse spiritual landscape.

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37. (3) Udaipur
The Manikya Lal Verma Adim Jati Shodh Sansthan is a prominent research and training institute located in Udaipur. It is dedicated to studying the culture, socio-economic conditions, and history of tribal communities in Rajasthan. The institute plays a crucial role in documenting tribal heritage and providing data to support the formulation of effective government policies for tribal welfare and development.

38. (1) I and II only
Tribal communities in southern Rajasthan rely heavily on non-timber forest produce for their livelihood and daily needs. Mahua flowers are collected for food and traditional beverages, while Tendu leaves are harvested for economic income, primarily for the bidi industry. While teak timber is a valuable forest resource, it is classified as timber and is subject to different harvesting regulations.

39. (4) Vagad region
The Vagdi dialect is the primary language spoken in the southern part of Rajasthan, specifically within the Vagad region, which encompasses the districts of Dungarpur and Banswara. This dialect is characterized by a strong linguistic influence from Gujarati due to the region's geographical proximity to Gujarat. It is an essential component of the cultural identity of the local tribal populations.

40. (2) Wildlife Protection Act, Panchayats (Extension to Scheduled Areas) Act, Scheduled Tribes and Other Traditional Forest Dwellers Act
The legislative framework for tribal and forest rights in India evolved through several key acts over decades. The Wildlife Protection Act was established first in 1972 to protect biodiversity. This was followed by the Panchayats (Extension to Scheduled Areas) Act in 1996, which empowered tribal local governance. Finally, the Scheduled Tribes and Other Traditional Forest Dwellers Act was enacted in 2006.

41. (3) Heavy indebtedness to local moneylenders leading to land transfer
Historically, land alienation among tribal communities in Rajasthan has been driven by severe economic vulnerability and a lack of access to formal credit. Tribal farmers often borrowed money from local moneylenders at exorbitant interest rates for social ceremonies or survival. When unable to repay these debts, they were forced to transfer their ancestral lands, leading to widespread dispossession and subsequent poverty.

42. (2) III and IV only
The Meena tribe is traditionally divided into Chaukidar and Zamindar groups, but the claim that Chaukidars hold a higher social status is not a universally accepted historical fact. Furthermore, the community did not submissively follow the Criminal Tribes Act; instead, they organized significant protests and agitations against its restrictive and discriminatory provisions until it was eventually repealed after India's independence.

43. (4) Free modern education for ST children (Class VI-XII)
Eklavya Model Residential Schools are a flagship central initiative aimed at providing high-quality, free modern education to Scheduled Tribe children in remote areas. These schools cater to students from Class six to twelve, offering them opportunities for holistic development and academic excellence. By providing residential facilities and quality instruction, the program aims to bridge the educational gap in tribal regions.

44. (1) A-iii, B-ii, C-i, D-iv
Unique cultural practices help identify various tribal groups in Rajasthan. The Helru institution is a hallmark of Garasia social cooperation. The Saharia tribe practices the Dhari Sanskar to interpret rebirth. The Chhela Bavji Fair is the most significant annual event for the Damor community. Additionally, the Meena tribe is historically recognized for its distinct socio-economic division into Chaukidar and Zamindar groups.

45. (3) High capital-intensive industrial manufacturing
The traditional tribal economy in Rajasthan is primarily based on subsistence activities that utilize local natural resources. This includes the collection of minor forest produce, small-scale farming, and traditional animal husbandry. However, high capital-intensive industrial

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CHAPTER 29
Tourism in Rajasthan

1. In which year was the Department of Tourism established in Rajasthan to systematically promote and develop the tourism sector in the state?
(1) 1956
(2) 1965
(3) 1978
(4) 1989
(5) Question not attempted

2. Read the following statements regarding the status of tourism in Rajasthan and select the correct option:
Statement I: Rajasthan was the first state in India to grant industry status to the tourism sector.
Statement II: The Mohammed Yunus Committee recommended granting this industry status.
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

3. Read the following information and match the Tourist Circuits of Rajasthan (List I) with their primary districts (List II):
List I: (Tourist Circuits)
A. Desert Circuit
B. Mewar Circuit
C. Dhundhad Circuit
D. Vagad Circuit
List II: (Primary Districts)
i. Udaipur, Chittorgarh, Rajsamand
ii. Jaipur, Dausa, Tonk
iii. Jaisalmer, Jodhpur, Bikaner
iv. Dungarpur, Banswara
Select the correct code:
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-i, C-iv, D-iii
(5) Question not attempted

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4. The Rajasthan Tourism Policy 2020 aims to achieve multiple objectives to boost the state economy. Which of the following is its primary overarching objective?
(1) To restrict tourism to major urban centers to preserve local rural culture and traditions.
(2) To completely privatize the state-owned Rajasthan Tourism Development Corporation's assets.
(3) To strictly limit the influx of foreign tourists to protect sensitive heritage monuments.
(4) To promote Rajasthan as a leading domestic and international tourist destination sustainably.
(5) Question not attempted

5. Read the following statements regarding the economic importance of tourism in Rajasthan:
I. It is a major source of foreign exchange earnings for the state.
II. It generates significant direct and indirect employment opportunities for local artisans.
III. It contributes to less than one percent of the state's Gross Domestic Product.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

6. In which year were six hill forts of Rajasthan inscribed on the UNESCO World Heritage List?
(1) 2010
(2) 2013
(3) 2015
(4) 2019
(5) Question not attempted

7. Identify the correct statement regarding the UNESCO World Heritage Hill Forts of Rajasthan.
(1) The list includes Mehrangarh Fort and Junagarh Fort as well as several other smaller forts.
(2) Only forts constructed exclusively from red sandstone from the Dholpur region were included.
(3) The recognition was granted primarily for their modern architectural renovations and upkeep.
(4) The list comprises Chittorgarh, Kumbhalgarh, Ranthambore, Amber, Jaisalmer, and Gagron forts.
(5) Question not attempted

8. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The conversion of ancestral havelis into heritage hotels has played a vital role in conserving Rajasthan's architectural heritage.
Reason (R): Heritage hotels generate revenue that funds the high maintenance costs of these historic properties while boosting local tourism.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

9. Which of the following forts is an exception and was NOT included in the UNESCO World Heritage List of Hill Forts of Rajasthan in 2013?
(1) Amber Fort
(2) Gagron Fort
(3) Mehrangarh Fort
(4) Kumbhalgarh Fort
(5) Question not attempted

10. Read the following information and match the Forts (List I) with their respective districts (List II):
List I: (Forts)
A. Bhatner Fort
B. Junagarh Fort
C. Taragarh Fort
D. Lohagarh Fort
List II: (Districts)
i. Bikaner
ii. Hanumangarh
iii. Bharatpur
iv. Bundi
Select the correct code:
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-i, C-iii, D-iv
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

11. Find the odd one out among the following historical structures in Rajasthan based on their current functional status as heritage hotels.
(1) Umaid Bhawan Palace
(2) Rambagh Palace
(3) Taj Lake Palace
(4) Hawa Mahal
(5) Question not attempted

12. Consider the following tourist attractions in Jaipur:
I. Nahargarh Fort
II. Albert Hall Museum
III. Saheliyon Ki Bari
IV. Jantar Mantar
Which of the above attractions are located within Jaipur?
(1) I, II, and III only
(2) II, III, and IV only
(3) I, II, and IV only
(4) I, III, and IV only
(5) Question not attempted

13. Which of the following criteria best defines the reason the Walled City of Jaipur was designated as a UNESCO World Heritage Site in 2019?
(1) It is the oldest continuously inhabited city in the Indian subcontinent since ancient times.
(2) It houses the largest collection of medieval weaponry and royal artifacts found in Asia.
(3) It exhibits an exceptional urban plan based on ancient Hindu grid patterns and architecture.
(4) It is the only city in India built entirely out of pink marble transported from Makrana.
(5) Question not attempted

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14. A tourist visiting the Jantar Mantar in Jaipur observes a massive structure used to measure time accurately down to seconds. Which astronomical instrument is the tourist observing?
(1) Jai Prakash Yantra
(2) Ram Yantra
(3) Nadivalaya Yantra
(4) Brihat Samrat Yantra
(5) Question not attempted

15. Select the correct chronological order of the construction of the following historic landmarks in Jaipur, from earliest to latest:
(1) Amber Fort, Jantar Mantar, Hawa Mahal, Albert Hall Museum
(2) Jantar Mantar, Amber Fort, Albert Hall Museum, Hawa Mahal
(3) Amber Fort, Hawa Mahal, Jantar Mantar, Albert Hall Museum
(4) Hawa Mahal, Amber Fort, Jantar Mantar, Albert Hall Museum
(5) Question not attempted

16. Who was the chief architect and town planner of the city of Jaipur?
(1) Mirza Ismail
(2) Vidyadhar Bhattacharya
(3) Sawai Jai Singh II
(4) Charles Correa
(5) Question not attempted

17. Read the following information and match the landmarks of Jaipur (List I) with their respective builders (List II):
List I: (Landmarks)
A. Jantar Mantar
B. Hawa Mahal
C. Albert Hall Museum
D. Amber Fort (Main Palace)
List II: (Builders)
i. Maharaja Sawai Pratap Singh
ii. Maharaja Sawai Ram Singh II
iii. Maharaja Sawai Jai Singh II
iv. Raja Man Singh I
Select the correct code:
(1) A-iii, B-i, C-ii, D-iv
(2) A-i, B-iii, C-iv, D-ii
(3) A-iii, B-ii, C-i, D-iv
(4) A-ii, B-iv, C-i, D-iii
(5) Question not attempted

18. Which of the following palaces or structures is NOT located within the complex of the Mehrangarh Fort in Jodhpur?
(1) Padmini Palace
(2) Phool Mahal
(3) Moti Mahal
(4) Sheesh Mahal
(5) Question not attempted

19. Consider the following statements regarding the heritage tourism of Jodhpur:
I. Mehrangarh Fort is situated on a steep hill known as Bhaunrila.
II. Jaswant Thada is a white marble cenotaph built in memory of Maharaja Jaswant Singh II.
III. Umaid Bhawan Palace is divided into a royal residence, a luxury hotel, and a museum.
IV. Mandore Garden houses the cenotaphs of the former rulers of Marwar.
V. The foundation of Mehrangarh Fort was laid by Rao Jodha.
Which of the above statement(s) is/are incorrect?
(1) I only
(2) II and III only
(3) IV and V only
(4) I and V only
(5) Question not attempted

20. What is the most widely accepted historical and cultural reason for the blue-painted houses in the old city of Jodhpur?
(1) Blue paint was mandated by the British administration for aesthetic uniformity across cities.
(2) Blue is the official state color of the Marwar kingdom designated during its initial founding.
(3) It signifies the abundance of water resources in the surrounding desert and arid regions.
(4) It was used by the Brahmin community to keep houses cool and repel pests like termites.
(5) Question not attempted

21. Identify the correctly matched pair regarding tourist destinations and their characteristics.
(1) Umaid Bhawan Palace - Constructed entirely of red sandstone
(2) Mandore Garden - Famous for prehistoric cave paintings

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(1) The lack of any stable road connectivity to the city of Jaisalmer and its dunes.
(2) Ecological degradation and waste management issues due to unregulated camp clusters.
(3) The complete absence of domestic tourists interested in participating in activities.
(4) Frequent flooding of the sand dunes during the monsoon season and related erosion.
(5) Question not attempted

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29. Arrange the following major tourist cities of Rajasthan geographically from West to East:
1. Jaisalmer
2. Jodhpur
3. Jaipur
4. Bharatpur

Select the correct order:
(1) 1, 2, 3, 4
(2) 2, 1, 4, 3
(3) 1, 3, 2, 4
(4) 4, 3, 2, 1
(5) Question not attempted

30. Identify the correct statement regarding Patwon Ki Haveli, a major tourist destination in Jaisalmer.
(1) It is a single massive mansion built entirely by the royal family of the Jaisalmer state.
(2) It was constructed primarily to serve as a defensive fortress against various invasions.
(3) It is carved entirely out of red sandstone brought from the distant Dholpur stone quarries.
(4) It is a cluster of five distinct havelis built by a wealthy trader named Guman Chand Patwa.
(5) Question not attempted

31. Read the following information and match the heritage properties of Jaisalmer (List I) with their defining attributes (List II):
List I: (Heritage Properties)
A. Nathmal Ji Ki Haveli
B. Salim Singh Ki Haveli
C. Jaisalmer Fort
D. Gadisar Lake

List II: (Attributes)
i. Features a distinctive peacock-shaped roof
ii. Built by two brothers, featuring distinct yet harmonious left and right wings
iii. A 'living fort' where a significant portion of the city's population resides
iv. A historic rainwater conservation lake surrounded by temples and ghats

Select the correct code:
(1) A-ii, B-i, C-iii, D-iv
(2) A-i, B-ii, C-iv, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-ii, B-iii, C-i, D-iv
(5) Question not attempted

32. Which of the following is an exception and NOT a characteristic feature associated with tourism in Jaisalmer?
(1) Exploring the fossilized remains at Akal Wood Fossil Park
(2) Witnessing the intricate carvings of the Dilwara Temples
(3) Experiencing camel safaris at the Sam Sand Dunes
(4) Visiting the Indo-Pak border post at Tanot Mata Temple
(5) Question not attempted

33. Read the following statements regarding desert tourism in Jaisalmer:
I. The Desert National Park is a major attraction for wildlife enthusiasts hoping to see the Great Indian Bustard.
II. Jaisalmer Fort is also known as Sonar Quila due to its golden-yellow sandstone architecture.
III. Khuri village is increasingly popular as a quieter alternative to Sam for sand dune experiences.
IV. The Desert Festival is exclusively organized by private hotel chains with no government involvement.

Which of the above statement(s) is/are correct?
(1) I, II, and III only
(2) I, III, and IV only
(3) II, III, and IV only
(4) I, II, and IV only
(5) Question not attempted

34. The only prominent temple in India dedicated to Lord Brahma, which draws lakhs of pilgrims annually, is located in which town of Rajasthan?
(1) Pushkar
(2) Nathdwara
(3) Mount Abu
(4) Osian
(5) Question not attempted

35. A cultural tourist wishes to witness the grand camel trading and religious dips in the holy lake at Pushkar. According to the Hindu calendar, during which period should they plan their visit?
(1) Chaitra Navratri
(2) Shravan Poornima
(3) Kartik Poornima

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(3) Jaswant Thada - Known as the Taj Mahal of Marwar
(4) Balsamand Lake - The only natural freshwater lake in Marwar
(5) Question not attempted

22. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Jodhpur is extensively promoted under the Desert Tourism Circuit of Rajasthan.
Reason (R): Jodhpur historically served as the capital of the Mewar kingdom, which controlled the Thar desert.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

23. Udaipur, renowned as the City of Lakes, was founded in 1559 by which Rajput ruler?
(1) Maharana Pratap
(2) Maharana Kumbha
(3) Maharana Sangram Singh
(4) Maharana Udai Singh II
(5) Question not attempted

24. Read the following information and match the lakes of Udaipur (List I) with their prominent features or structures (List II):
List I: (Lakes)
A. Lake Pichola
B. Fateh Sagar Lake
C. Jaisamand Lake
D. Udai Sagar Lake
List II: (Features)
i. Jag Mandir and Taj Lake Palace
ii. Nehru Park and Udaipur Solar Observatory
iii. Dhebar Lake, second-largest artificial lake in India
iv. Built by Maharana Udai Singh II in 1565
Select the correct code:
(1) A-i, B-ii, C-iii, D-iv
(2) A-ii, B-i, C-iv, D-iii
(3) A-iii, B-iv, C-i, D-ii
(4) A-i, B-iii, C-ii, D-iv
(5) Question not attempted

25. Identify the incorrect statement regarding the major tourist attractions of Udaipur.
(1) Sajjangarh Palace is also known as the Monsoon Palace.
(2) Saheliyon Ki Bari was built for the royal ladies and is famous for its marble elephants and fountains.
(3) The City Palace of Udaipur is predominantly built on the banks of Fateh Sagar Lake.
(4) Jagdish Temple is a large Hindu temple located in the middle of Udaipur city built by Maharana Jagat Singh I.
(5) Question not attempted

26. Consider the following tourist attractions:
I. Ahar Cenotaphs
II. Bagore Ki Haveli
III. Patwon Ki Haveli
Which of the above attractions are located in Udaipur?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

27. Which of the following is the most appropriate reason why Udaipur has emerged as one of the most prominent wedding tourism destinations in the world?
(1) The state government provides free accommodation for international weddings of state guests.
(2) It has the largest international airport in Rajasthan built for private charter flights.
(3) It is the only city in India where historic monuments can be legally purchased for use.
(4) It offers historic palaces, serene lakes, and luxury hospitality for high-end events.
(5) Question not attempted

28. The Shilpgram Utsav, a major rural arts and crafts festival attracting thousands of tourists, is held annually in Udaipur during which month?
(1) October
(2) December
(3) March
(4) August
(5) Question not attempted

NODIA

(1) 1981
(2) 1985
(3) 1992
(4) 2005
(5) Question not attempted

43. Identify the incorrect pair among the following wildlife sanctuaries/parks and their flagship species or attractions.
(1) Keoladeo National Park - Migratory waterfowl
(2) Ranthambore National Park - Bengal Tiger
(3) Jhalana Safari Park - Leopard
(4) Tal Chhapar Sanctuary - Hoolock Gibbon
(5) Question not attempted

44. Read the following statements regarding Keoladeo Ghana National Park:
I. It is an entirely natural, unmanaged wetland system formed by tectonic shifts.
II. It formerly served as a royal duck-shooting reserve for the Maharajas of Bharatpur.
III. It is designated as a Ramsar Wetland of International Importance.
Which of the above statement(s) is/are correct?
(1) I and II only
(2) II and III only
(3) I and III only
(4) I, II, and III
(5) Question not attempted

45. What is the primary ecological reason that Keoladeo National Park attracts thousands of migratory birds during the winter season?
(1) It is the only national park in India devoid of any natural predators for waterfowl species.
(2) It provides artificial breeding grounds equipped with temperature control for bird chicks.
(3) It is on the Central Asian Flyway and offers shallow freshwater marshes for foraging.
(4) The dense canopy of eucalyptus trees provides perfect nesting grounds for winter species.
(5) Question not attempted

46. Read the following information and match the major tourism festivals of Rajasthan (List I) with their traditional host districts (List II):
List I: (Festivals)
A. Desert Festival
B. Marwar Festival
C. Camel Festival
D. Elephant Festival
List II: (Districts)
i. Jodhpur
ii. Jaisalmer
iii. Jaipur
iv. Bikaner
Select the correct code:
(1) A-ii, B-i, C-iv, D-iii
(2) A-i, B-ii, C-iii, D-iv
(3) A-ii, B-iv, C-i, D-iii
(4) A-iv, B-iii, C-ii, D-i
(5) Question not attempted

47. Identify the correct statement regarding the Sam Sand Dunes, a major focal point for desert tourism.
(1) They offer luxury tented camps, camel safaris, and performances of Rajasthani folk arts.
(2) They are located on the eastern fringes of the Aravalli range near the Alwar district.
(3) The dunes are strictly cordoned off by the military and restricted for foreign tourists.
(4) They are characterized by vast stretches of black volcanic sand found in the region.
(5) Question not attempted

48. Select the correct chronological sequence of the establishment/declaration of the following Tiger Reserves in Rajasthan, from earliest to most recent:
(1) Sariska, Ranthambore, Mukundra Hills, Ramgarh Vishdhari
(2) Ranthambore, Sariska, Mukundra Hills, Ramgarh Vishdhari
(3) Ranthambore, Mukundra Hills, Sariska, Ramgarh Vishdhari
(4) Sariska, Mukundra Hills, Ranthambore, Ramgarh Vishdhari
(5) Question not attempted

49. Which of the following events or competitions is NOT traditionally a part of the Desert Festival held in Jaisalmer?
(1) Turban Tying Competition
(2) Elephant Race
(3) Mr. Desert Pageant
(4) Camel Polo
(5) Question not attempted

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(4) Magh Amavasya
(5) Question not attempted

36. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): Ajmer represents a unique symbol of syncretic culture and religious harmony in India's tourism landscape.
Reason (R): It hosts the revered Dargah of Sufi saint Khwaja Moinuddin Chishti and serves as the gateway to the sacred Hindu pilgrimage site of Pushkar.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

37. Which of the following historical monuments is NOT located in Ajmer?
(1) Adhai Din Ka Jhonpra
(2) Taragarh Fort
(3) Moosi Maharani Ki Chhatri
(4) Ana Sagar Lake
(5) Question not attempted

38. Read the following information and match the landmarks of Ranthambore (List I) with their descriptions (List II):
List I: (Landmarks)
A. Padam Talao
B. Trinetra Ganesh Temple
C. Raj Bagh Ruins
D. Jogi Mahal
List II: (Descriptions)
i. A historic forest rest house located near a large banyan tree
ii. The largest lake inside the tiger reserve
iii. Ancient stone structures located between two prominent lakes
iv. A famous religious site situated inside the historic fort
Select the correct code:
(1) A-ii, B-iv, C-iii, D-i
(2) A-i, B-ii, C-iv, D-iii
(3) A-ii, B-iii, C-i, D-iv
(4) A-iv, B-i, C-ii, D-iii
(5) Question not attempted

39. Read the following statements regarding Ranthambore National Park and select the correct option:
Statement I: Ranthambore is internationally renowned for its diurnal tigers, making them relatively easier to spot during daytime safaris.
Statement II: The majestic Ranthambore Fort, a UNESCO World Heritage site, is located deep within the boundaries of the national park.
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

40. Read the following statements regarding the wildlife tourism locations in Rajasthan:
I. Ranthambore National Park is located in Sawai Madhopur.
II. Keoladeo National Park is located in Bharatpur.
III. Sariska Tiger Reserve is located in Alwar.
IV. Mukundra Hills Tiger Reserve is located in Kota.
V. Desert National Park is located in Udaipur.
Which of the above statement(s) is/are incorrect?
(1) I and II only
(2) V only
(3) III and IV only
(4) II, III, and V only
(5) Question not attempted

41. Ranthambore National Park was brought under the ambit of 'Project Tiger' to promote wildlife conservation and eco-tourism in which year?
(1) 1970
(2) 1973
(3) 1980
(4) 1991
(5) Question not attempted

42. In which year was the Keoladeo Ghana National Park declared a UNESCO World Heritage Site due to its exceptional significance for birdwatching tourism?

NODIA

employment and preventing rural migration by linking tourism with village culture.
(5) Question not attempted

57. Which luxury tourist train was launched first in Rajasthan, pioneering the concept of heritage rail tourism in India?
(1) Royal Rajasthan on Wheels
(2) Heritage on Wheels
(3) Palace on Wheels
(4) Maharaja Express
(5) Question not attempted

58. Consider the following functions and activities associated with the Rajasthan Tourism Development Corporation (RTDC):
I. Managing state-owned budget and heritage hotels.
II. Organizing and promoting various cultural fairs and festivals.
III. Providing tourist transport facilities including package tours.
IV. Issuing international visas for foreign tourists arriving in Rajasthan.
V. Collaborating in the management of the Palace on Wheels train.
Which of the above activities are handled by the RTDC?
(1) I, II, III, and IV only
(2) II, III, IV, and V only
(3) I, II, III, and V only
(4) I, III, IV, and V only
(5) Question not attempted

59. Which of the following best describes the cultural significance of the Beneshwar Fair in the context of religious tourism in Rajasthan?
(1) It is a massive cattle fair in northern India, held primarily for camel and horse trading.
(2) It is an annual gathering of Sufi musicians held at the Ajmer Dargah for regional peace.
(3) It is a seasonal festival in the Thar desert to celebrate the arrival of the monsoon rains.
(4) It is a tribal congregation held at the confluence of the Som, Mahi, and Jakham rivers.
(5) Question not attempted

60. A tourism developer is planning to invest in adventure tourism activities. Which of the following activity-location combinations applies the state's geographical advantages most correctly?
(1) White-water river rafting in Jaisalmer
(2) Dune bashing and off-roading in Jaisalmer
(3) High-altitude snow trekking in Mount Abu
(4) Deep-sea diving in Udaipur
(5) Question not attempted

61. Arrange the following major tourist sites in Rajasthan geographically from West to East:
1. Jaisalmer Fort
2. Mehrangarh Fort
3. Amber Fort
4. Keoladeo National Park
Select the correct order:
(1) 1, 2, 3, 4
(2) 2, 1, 4, 3
(3) 1, 3, 2, 4
(4) 4, 3, 2, 1
(5) Question not attempted

62. The marketing campaign of Rajasthan Tourism has seen several tagline changes. What was the tagline adopted in 2019, reviving a classic phrase that replaced "Jaane Kya Dikh Jaye"?
(1) The Incredible State of India
(2) God's Own Country
(3) The Heart of Incredible India
(4) Padharo Mhare Desh
(5) Question not attempted

63. Identify the correctly matched pair regarding a village in Rajasthan and the specific craft/feature that drives its rural tourism.
(1) Molela - Terracotta plaques and idols
(2) Khuri - Blue pottery
(3) Samode - Hand-block printing
(4) Bagru - Camel bone carving
(5) Question not attempted

64. Read the following statements regarding circuits designated under the central government's Swadesh Darshan Scheme, which have projects implemented in Rajasthan:
I. Krishna Circuit
II. Desert Circuit
III. Himalayan Circuit
Which of the above circuit(s) is/are active in Rajasthan?
(1) I and II only
(2) II and III only

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50. Given below are two statements, one labelled as Assertion (A) and the other as Reason (R):
Assertion (A): The peak tourist season for desert safaris in Jaisalmer is during the winter months from October to March.
Reason (R): The harsh and extreme summer climate of the Thar Desert makes outdoor activities and dune camping highly uncomfortable.
In the context of the above two statements, which one of the following is correct?
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is not the correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.
(5) Question not attempted

51. The famous Desert Festival of Jaisalmer is officially organized by the district administration in collaboration with which state government entity?
(1) Rajasthan State Road Transport Corporation
(2) Ministry of Culture, Government of India
(3) Department of Tourism, Rajasthan
(4) Rajasthan Forest Department
(5) Question not attempted

52. Read the following statements regarding major religious tourism destinations and their locations:
I. The temple of Shrinathji is located in Nathdwara.
II. The Karni Mata Temple, famous for its rats, is located in Deshnoke.
III. The principal Brahma Temple is located in Pushkar.
IV. The Govind Dev Ji Temple is a primary religious site located in Udaipur.
Which of the above statement(s) is/are correct?
(1) I, II, and IV only
(2) I, III, and IV only
(3) I, II, and III only
(4) II, III, and IV only
(5) Question not attempted

53. Find the odd one out among the following historic religious sites in Rajasthan based on their primary religious affiliation.
(1) Ranakpur Temples
(2) Dilwara Temples
(3) Dargah of Khwaja Moinuddin Chishti
(4) Lodurva Temples
(5) Question not attempted

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54. What is the fundamental objective of the 'Paying Guest Scheme' operated by the Department of Tourism in Rajasthan?
(1) To allow foreign tourists to work temporarily in local industries for extra income.
(2) To provide affordable lodging and a first-hand experience of local culture with families.
(3) To subsidize the accommodation costs of tourists staying in high-end five-star hotels.
(4) To mandate that every tourist must pay a fixed cultural tax before entering rural areas.
(5) Question not attempted

55. Read the following information and match the Rajasthan Tourism Development Corporation (RTDC) hotels (List I) with their respective locations (List II):
List I: (RTDC Hotels)
A. Hotel Ghoomar
B. Hotel Moomal
C. Hotel Shikhar
D. Hotel Kajri
List II: (Locations)
i. Mount Abu
ii. Udaipur
iii. Jodhpur
iv. Jaisalmer
Select the correct code:
(1) A-iii, B-iv, C-i, D-ii
(2) A-iv, B-iii, C-ii, D-i
(3) A-i, B-ii, C-iv, D-iii
(4) A-ii, B-i, C-iii, D-iv
(5) Question not attempted

56. Identify the incorrect statement regarding the Rajasthan Rural Tourism Scheme, 2022.
(1) It mandates that a rural guest house must have a minimum of 50 luxury rooms to qualify for registration.
(2) It promotes the establishment of rural guest houses, agri-tourism units, and camping sites.
(3) It provides for a 100% exemption on stamp duty for setting up rural tourism units.
(4) The scheme is aimed at creating local

IV. The Dargah of Miran Sahib is situated within Taragarh Fort, Ajmer.
V. The Jama Masjid of Delhi was built by a Rajput king.

Which of the above statement(s) is/are correct regarding sites relevant to Rajasthan's religious tourism?
(1) I, II, III, and IV only
(2) I, III, IV, and V only
(3) II, III, IV, and V only
(4) I, II, III, and V only
(5) Question not attempted

73. In which year was the dedicated 'Tourist Police' force deployed in Rajasthan to ensure the safety and security of domestic and international visitors?
(1) 1990
(2) 2000
(3) 2015
(4) 2020
(5) Question not attempted

74. Identify the incorrect statement regarding the tourism infrastructure development in Rajasthan.
(1) The Rajasthan Tourism Unit Policy strictly prohibits the conversion of any ancestral haveli into a commercial hotel.
(2) The state has focused heavily on improving air connectivity to tourist hubs like Udaipur, Jodhpur, and Kishangarh.
(3) The RTDC operates a fleet of buses to provide localized sightseeing tours.
(4) The state promotes wayside amenities along major highways to facilitate road-tripping tourists.
(5) Question not attempted

75. A tourist wishes to experience an itinerary featuring a medieval fort situated inside a dense forest, an ancient temple dedicated to Lord Ganesha, and the chance to photograph tigers in the wild. Which destination should they choose?
(1) Sariska Tiger Reserve
(2) Kumbhalgarh Wildlife Sanctuary
(3) Mukundra Hills Tiger Reserve
(4) Ranthambore National Park
(5) Question not attempted

76. Identify the correct statement regarding the incentives provided under the tourism policies of Rajasthan.
(1) Foreign tourists are completely exempt from paying any entry fees at state-owned monuments.
(2) Heritage hotels are charged industrial electricity tariffs rather than higher commercial tariffs.
(3) RTDC provides mandatory free airfare to all foreign tourists arriving in Jaipur.
(4) The state restricts private investment in the adventure tourism sector.
(5) Question not attempted

77. Under the guidelines of the Ministry of Tourism and Rajasthan Tourism, which of the following criteria primarily defines a 'Heritage Hotel'?
(1) A newly constructed hotel designed to look like a historic palace for visual appeal.
(2) Any hotel located within a 5-kilometer radius of a UNESCO World Heritage site's zone.
(3) A historic property, castle, or haveli built before 1950 converted into a hotel.
(4) A property exclusively owned and operated by the descendants of the Mughal dynasty.
(5) Question not attempted

78. Find the odd one out among the following historical forts of Rajasthan and the specific hills/elevations they are built upon.
(1) Mehrangarh Fort - Chidiya-Tunk Hill
(2) Amber Fort - Aravalli Range
(3) Jaisalmer Fort - Trikuta Hill
(4) Junagarh Fort - Aravali Peak
(5) Question not attempted

79. The "Mewar Festival," celebrated with immense enthusiasm in Udaipur, specifically marks the arrival of which season?
(1) Winter
(2) Spring
(3) Monsoon
(4) Autumn
(5) Question not attempted

80. Which of the following is considered the most critical contemporary challenge facing the sustainability of desert tourism in places like the Sam Sand Dunes?

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(3) I and III only
(4) I, II, and III
(5) Question not attempted

65. In which year was the Rajasthan Tourism Development Corporation (RTDC) established to act as the nodal agency for tourism infrastructure development in the state?
(1) 1956
(2) 1969
(3) 1978
(4) 1991
(5) Question not attempted

66. Which of the following is an exception and NOT an objective of the Rajasthan Eco-Tourism Policy 2021?
(1) Allowing large-scale commercial mining and heavy industries inside forest buffer zones.
(2) Promoting community-based eco-tourism to benefit local populations through employment.
(3) Encouraging the development of nature trails, bird watching, and trekking activities.
(4) Conserving the state's natural heritage and biodiversity through regulated tourism.
(5) Question not attempted

67. Read the following statements regarding Pushkar and select the correct option:
Statement I: Pushkar is globally renowned for its large-scale cultivation and export of rose products.
Statement II: The Pushkar Fair is exclusively a religious gathering with a strict ban on any form of animal trading.
(1) Statement I is correct but Statement II is incorrect
(2) Statement II is correct but Statement I is incorrect
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect
(5) Question not attempted

68. Consider the following spots for adventure tourism in Rajasthan:
I. Jhalana - Leopard Safari
II. Mount Abu - Trekking and Camping
III. Sam Sand Dunes - Parasailing and Dune Bashing
IV. Chambal River - White-water rafting rapids
Which of the above correctly matches the location with its popular adventure activity?
(1) I, II, and III only
(2) II, III, and IV only
(3) I, III, and IV only
(4) I, II, and IV only
(5) Question not attempted

69. Which authority is primarily responsible for conducting examinations, training, and issuing licenses for tourist guides in Rajasthan?
(1) Archaeological Survey of India (ASI)
(2) Indian Railway Catering and Tourism Corporation (IRCTC)
(3) Department of Tourism, Government of Rajasthan
(4) Ministry of Home Affairs
(5) Question not attempted

NODIA

70. Why is the 'Palace on Wheels' considered a highly successful model of luxury tourism infrastructure?
(1) It is a high-speed commuter train connecting rural villages to major regional cities.
(2) It offers a luxury hotel experience covering heritage and wildlife sites weekly.
(3) It allows tourists to permanently purchase historic railway coaches for private use.
(4) It runs entirely on solar energy, making it the cheapest travel option in the state.
(5) Question not attempted

71. Which of the following is NOT a luxury or heritage tourist train associated with Rajasthan?
(1) Palace on Wheels
(2) Royal Rajasthan on Wheels
(3) Heritage on Wheels
(4) Deccan Odyssey
(5) Question not attempted

72. Read the following statements regarding important Islamic pilgrimage and heritage sites in Rajasthan:
I. Dargah of Khwaja Moinuddin Chishti is located in Ajmer.
II. Adhai Din Ka Jhonpra is located in Ajmer.
III. Dargah of Syedi Fakhruddin is located in Galiakot.

ANSWERS

1. (1) 1956
The Department of Tourism was established in 1956. It focuses on promoting Rajasthan as a premier destination. This move helped organize promotional activities and infrastructure development. Systematic efforts led to the state becoming a major hub for domestic and international travelers. It serves as the primary administrative body for tourism policy implementation and regulation today.

2. (3) Both Statement I and Statement II are correct
Rajasthan achieved a pioneering milestone by granting industry status to tourism in 1989. This significant decision followed recommendations from the Mohammed Yunus Committee. Such status allows tourism units to benefit from industrial incentives, including subsidized electricity and land. This policy shift greatly accelerated private investment and modern infrastructure growth across various historical and cultural circuits within the state.

3. (1) A-iii, B-i, C-ii, D-iv
Regional tourism circuits group districts to streamline travel itineraries. The Desert Circuit encompasses Jaisalmer, Jodhpur, and Bikaner. The Mewar Circuit includes Udaipur, Chittorgarh, and Rajsamand. Dhundhad covers the Jaipur, Dausa, and Tonk regions. Finally, the Vagad Circuit focuses on the tribal heritage of Dungarpur and Banswara. These classifications help in targeted infrastructure development and specific cultural promotion.

4. (4) To promote Rajasthan as a leading domestic and international tourist destination sustainably.
The primary goal of the Rajasthan Tourism Policy 2020 involves establishing the state as a leading sustainable destination globally. It emphasizes enhancing the visitor experience through better infrastructure and safety measures. Additionally, the policy focuses on diversifying products, including rural and eco-tourism. This strategic framework seeks to boost the local economy while preserving traditional heritage and environment.

NODIA

5. (1) I and II only
Tourism acts as a cornerstone of the regional economy by generating substantial foreign exchange through international arrivals. It creates extensive direct and indirect employment opportunities for local artisans, guides, and hospitality staff. Contrary to low estimates, it contributes significantly to the state's Gross Domestic Product. The sector drives the growth of traditional handicrafts and local small-scale service industries.

6. (2) 2013
Six majestic hill forts were inscribed on the UNESCO World Heritage List in 2013 during the 37th session in Phnom Penh. These forts represent the Rajput military architectural style and strategic regional planning. The recognition highlighted their historical significance and unique defensive features. This global status has substantially increased international tourist footfall and funded conservation efforts for these structures.

7. (4) The list comprises Chittorgarh, Kumbhalgarh, Ranthambore, Amber, Jaisalmer, and Gagron forts.
The UNESCO World Heritage Hill Forts selection comprises Chittorgarh, Kumbhalgarh, Ranthambore, Amber, Jaisalmer, and Gagron. These six sites were chosen for their exceptional universal value and architectural diversity. They showcase the evolution of Rajput defensive structures between the eighth and eighteenth centuries. Notably, Mehrangarh and Junagarh forts are not included in this specific 2013 world heritage group.

8. (1) Both A and R are true and R is the correct explanation of A.
Converting ancestral havelis into heritage hotels serves as an effective conservation strategy. These historic properties often require expensive maintenance that traditional owners cannot afford alone. The revenue generated through hospitality provides the necessary funds for professional restoration and upkeep.

45. (3) It is on the Central Asian Flyway and offers shallow freshwater marshes for foraging.
Keoladeo National Park is strategically located on the Central Asian Flyway, a major migration route for birds. Its shallow freshwater marshes provide abundant food sources, such as fish and aquatic plants, which are essential for wintering waterfowl. These managed wetlands offer a safe and nutrient-rich environment for species traveling from Siberia and other cold regions. This attracts global birdwatching tourism.

46. (1) A-ii, B-i, C-iv, D-iii
Rajasthan's vibrant culture is showcased through various regional festivals. The Desert Festival is held annually in Jaisalmer, featuring desert crafts and competitions. The Marwar Festival takes place in Jodhpur to celebrate the region's folk music and dance. The Camel Festival is the signature event of Bikaner, highlighting the ship of the desert. The Elephant Festival is traditionally celebrated in Jaipur.

47. (1) They offer luxury tented camps, camel safaris, and performances of Rajasthani folk arts.
Sam Sand Dunes, located about 45 kilometers from Jaisalmer city, are a major hub for desert tourism. They provide tourists with immersive experiences such as camel and jeep safaris across shifting dunes. Numerous luxury tented camps offer traditional Rajasthani hospitality, including folk music and dance performances under the starlit sky. These dunes are accessible to all tourists and are a signature feature.

48. (2) Ranthambore, Sariska, Mukundra Hills, Ramgarh Vishdhari
The establishment of tiger reserves in Rajasthan followed a chronological progression based on conservation needs. Ranthambore and Sariska were among the earliest designated under Project Tiger in the 1970s. Mukundra Hills in the Kota region was notified much later in 2013. Most recently, Ramgarh Vishdhari in Bundi was declared the state's fourth tiger reserve in 2022. This reflects expanding wildlife protection.

49. (2) Elephant Race
The Desert Festival in Jaisalmer focuses on local desert culture and livestock. Traditional events include the Turban Tying competition, the Mr. Desert pageant, and Camel Polo matches. However, the Elephant Race is not a part of this festival. Elephant-related events are primarily associated with the Elephant Festival in Jaipur. Jaisalmer's festivities celebrate the camel as the primary animal of the desert.

50. (1) Both A and R are true and R is the correct explanation of A.
The peak season for tourism in Jaisalmer is winter, from October to March, when the weather is pleasant for outdoor activities. The reason for this is the extreme summer climate of the Thar Desert, where temperatures can exceed 45 degrees Celsius. Such intense heat makes desert safaris and camping in the sand dunes physically exhausting. Climate directly dictates regional tourism trends.

51. (3) Department of Tourism, Rajasthan
The Desert Festival is an official cultural event organized by the Department of Tourism, Government of Rajasthan, in coordination with the Jaisalmer district administration. While private stakeholders such as hotels and travel agencies participate, the planning, funding, and international marketing are primarily managed by the state's tourism department. This government backing ensures the preservation of authentic folk traditions for visitors.

52. (3) I, II, and III only
Nathdwara is famous for the Shrinathji Temple, a major center for the Pushtimarg sect. The Karni Mata Temple in Deshnoke is globally known for the thousands of sacred rats it protects. Pushkar houses the principal temple dedicated to Lord Brahma. However, the Govind Dev Ji Temple is located in Jaipur, not Udaipur. It is one of the most important Krishna shrines.

53. (3) Dargah of Khwaja Moinuddin Chishti
Ranakpur, Dilwara, and Lodurva are all prominent Jain temple complexes known for their exquisite marble or stone carvings and religious significance to the Jain community. In contrast, the Dargah of Khwaja Moinuddin Chishti in Ajmer is a world-renowned Islamic Sufi shrine. This difference in primary religious affiliation makes the Dargah the odd one out among the listed sites for religious pilgrims.

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built the iconic five-story Hawa Mahal in 1799. Maharaja Sawai Ram Singh II commissioned the Albert Hall Museum during the late nineteenth century. Raja Man Singh I was the primary builder of the initial structures within Amber Fort.

18. (1) Padmini Palace
Phool Mahal, Moti Mahal, and Sheesh Mahal are all exquisite palaces located within the Mehrangarh Fort complex in Jodhpur. They are known for their intricate carvings and royal grandeur. However, Padmini Palace is situated within the Chittorgarh Fort complex in southern Rajasthan. It is historically associated with Queen Padmini and the Mewar dynasty, rather than the Rathore rulers of Jodhpur.

19. (1) I only
Mehrangarh Fort is built on a steep hill known as Chidiya-Tunk, not Bhaunrila. The foundation was indeed laid by Rao Jodha in 1459. Jaswant Thada serves as a beautiful white marble cenotaph for Maharaja Jaswant Singh II. Umaid Bhawan Palace functions as a multi-purpose royal residence and hotel. Mandore Garden preserves the ancient cenotaphs of Marwar rulers before the capital moved.

20. (4) It was used by the Brahmin community to keep houses cool and repel pests like termites.
The blue color seen in Jodhpur's old city was traditionally used by the Brahmin community. Chemically, the paint contained copper sulfate, which helped repel termites and other pests common in desert environments. Additionally, the specific shade of indigo blue reflects sunlight, keeping the interiors of these stone houses significantly cooler during the intense summer heat typical of the Thar Desert.

21. (3) Jaswant Thada - Known as the Taj Mahal of Marwar
Jaswant Thada is widely referred to as the Taj Mahal of Marwar because of its intricate white marble construction and serene location. Built in 1899, it serves as a memorial for Maharaja Jaswant Singh II. The structure features thin marble sheets that emit a warm glow when illuminated by the sun. This site remains a significant attraction for heritage and architecture enthusiasts.

22. (3) A is true but R is false.
Jodhpur is a major hub of the Desert Tourism Circuit because of its proximity to the Thar Desert and its historical importance. However, the reason provided is incorrect because Jodhpur was the capital of the Marwar kingdom, not the Mewar kingdom. Mewar was centered in Udaipur and Chittorgarh. Therefore, while the assertion is factually accurate, the supporting historical reason is fundamentally wrong.

23. (4) Maharana Udai Singh II
Udaipur was founded in 1559 by Maharana Udai Singh II of the Mewar dynasty. He shifted the capital from Chittorgarh to this safer, hilly location following multiple invasions. The city was strategically planned around the Aravalli hills and natural water sources. This move ensured the survival and continued resistance of the Sisodia Rajputs against the Mughal Empire, leading to city development.

24. (1) A-i, B-ii, C-iii, D-iv
Udaipur features several interconnected lakes with unique characteristics. Lake Pichola houses the famous Jag Mandir and the Taj Lake Palace. Fateh Sagar Lake is home to Nehru Park and a solar observatory. Jaisamand Lake, also called Dhebar Lake, is known as one of India's largest artificial freshwater bodies. Udai Sagar Lake was constructed by Maharana Udai Singh II for water security.

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25. (3) The City Palace of Udaipur is predominantly built on the banks of Fateh Sagar Lake.
The City Palace of Udaipur is situated on the eastern banks of Lake Pichola, not Fateh Sagar Lake. It is a massive complex of palaces and courtyards. Sajjangarh Palace is indeed known as the Monsoon Palace for its panoramic rainy season views. Saheliyon Ki Bari is a historic garden built for royal women. Jagdish Temple remains a prominent religious landmark in the center.

26. (1) I and II only
Ahar Cenotaphs and Bagore Ki Haveli are both significant historical sites located in Udaipur. The cenotaphs commemorate the rulers of Mewar, while Bagore Ki Haveli is a waterfront mansion known for its cultural performances and museum. Patwon Ki Haveli, however, is a cluster of five

expansion. The rapid growth of camp clusters has led to ecological degradation of the fragile desert environment. Waste management, particularly plastic pollution and noise, poses a significant challenge. Addressing these environmental impacts is critical to ensuring that the dunes remain an attractive destination for future generations of global tourists.

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spiritual merit. It is internationally recognized as one of the world's largest livestock fairs, attracting global tourists.

36. (1) Both A and R are true and R is the correct explanation of A.
Ajmer is a symbol of religious harmony because it houses the Dargah of Khwaja Moinuddin Chishti, a site revered by people of all faiths. Additionally, its proximity to Pushkar, a holy Hindu site, facilitates a unique confluence of diverse religious traditions. This geographical and spiritual link attracts millions of visitors, fostering a syncretic cultural environment. The coexistence of these shrines exemplifies heritage.

37. (3) Moosi Maharani Ki Chhatri
Adhai Din Ka Jhonpra, Taragarh Fort, and Ana Sagar Lake are all historic landmarks located in Ajmer. Adhai Din Ka Jhonpra is an ancient mosque, and Ana Sagar is a large artificial lake. However, Moosi Maharani Ki Chhatri is a stunning nineteenth-century cenotaph located in Alwar. It was built by Vinay Singh in memory of Maharaja Bakhtawar Singh and his queen.

38. (1) A-ii, B-iv, C-iii, D-i
Ranthambore features several landmarks within its wildlife sanctuary. Padam Talao is the largest lake where tigers are often spotted. The Trinetra Ganesh Temple is a famous religious site located inside the historic fort. Raj Bagh Ruins are ancient stone structures situated between lakes, offering a scenic backdrop for wildlife. Jogi Mahal is a historic forest rest house located near a banyan tree.

39. (3) Both Statement I and Statement II are correct
Ranthambore is famous for its diurnal tigers, which are active during the day, making wildlife viewing more successful for tourists. Furthermore, the Ranthambore Fort, recognized as a UNESCO World Heritage Site, is geographically situated within the national park boundaries. This unique combination of natural wilderness and historical architecture provides a multifaceted experience for visitors, making it one of India's most popular reserves.

40. (2) V only
Most statements correctly identify wildlife sites: Ranthambore in Sawai Madhopur, Keoladeo in Bharatpur, Sariska in Alwar, and Mukundra Hills in Kota. However, Desert National Park is located in the Jaisalmer and Barmer districts, not Udaipur. It is characterized by desert ecosystems and arid-zone wildlife. Udaipur is instead known for its lakes and hilly sanctuaries like Sajjangarh in the surrounding region.

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41. (2) 1973
Ranthambore was among the first nine tiger reserves established at the launch of Project Tiger in 1973. This national conservation initiative aimed to protect the dwindling population of Bengal tigers. The inclusion of Ranthambore provided the necessary legal and financial framework for intensive wildlife management. Since then, it has become a global model for tiger conservation and a major destination.

42. (2) 1985
Keoladeo Ghana National Park in Bharatpur was inscribed on the UNESCO World Heritage List in 1985. It was recognized as a natural site due to its significance as a major wintering ground for Palaearctic migratory waterfowl. The park's diverse habitats support over 350 bird species. This international recognition has cemented its status as one of the world's most important bird sanctuaries.

43. (4) Tal Chhapar Sanctuary - Hoolock Gibbon
Keoladeo is famous for migratory birds, Ranthambore for tigers, and Jhalana for leopards. However, Tal Chhapar Sanctuary in Churu is renowned specifically for the Blackbuck, not the Hoolock Gibbon. The Hoolock Gibbon is found in the rainforests of Northeast India and is not native to Rajasthan. Tal Chhapar provides a unique grassland habitat for diverse avian and ungulate desert species.

44. (2) II and III only
Keoladeo National Park is not a natural system; it is a man-made wetland managed through canals and dykes. Historically, it served as a private duck-shooting reserve for Bharatpur's royalty. Today, it is recognized as a Ramsar Wetland of International Importance, highlighting its ecological value for migratory birds. The system requires active management to maintain water levels for various avian species.

famous havelis located in Jaisalmer. Therefore, only the first two attractions are situated within Udaipur.

27. (4) It offers historic palaces, serene lakes, and luxury hospitality for high-end events.
Udaipur has become a premier global destination for luxury weddings due to its romantic setting and historical grandeur. The combination of well-preserved lakefront palaces, tranquil water bodies, and world-class heritage hotels provides a unique aesthetic appeal. These venues offer high-end hospitality services that cater to international standards. The state's rich culture and professional event management infrastructure further enhance this status.

28. (2) December
Shilpgram Utsav is a ten-day annual festival celebrated in Udaipur during late December. It showcases the diverse folk arts, crafts, and traditions of rural India, particularly from the western states. The event attracts numerous artisans and performers, providing a platform for cultural exchange. For tourists, it offers a vibrant experience of traditional music, dance, and handcrafted products in an authentic setting.

29. (1) 1, 2, 3, 4
Geographically, Jaisalmer is the westernmost city, located deep in the Thar Desert. Jodhpur lies to the east of Jaisalmer in central-western Rajasthan. Moving further east across the Aravalli range, one reaches the capital city of Jaipur. Finally, Bharatpur is situated in the easternmost part of the state near the border of Uttar Pradesh. This sequence accurately follows the state's longitudinal span.

30. (4) It is a cluster of five distinct havelis built by a wealthy trader named Guman Chand Patwa.
Patwon Ki Haveli is a famous architectural landmark in Jaisalmer consisting of a cluster of five separate mansions. These were built between 1805 and 1860 by a wealthy merchant named Guman Chand Patwa for his five sons. The structures are renowned for their intricate yellow sandstone carvings. Unlike royal forts, these havelis represent the prosperity of the medieval merchant class.

31. (1) A-ii, B-i, C-iii, D-iv
Jaisalmer's heritage is defined by various unique structures. Nathmal Ji Ki Haveli was built by two brothers whose distinct styles created a symmetrical yet unique facade. Salim Singh Ki Haveli is famous for its peacock-shaped roof. Jaisalmer Fort is a 'living fort' where residents still live within its walls. Gadisar Lake is a historical rainwater reservoir surrounded by ornate shrines.

32. (2) Witnessing the intricate carvings of the Dilwara Temples
Exploring Akal Wood Fossil Park, enjoying camel safaris at Sam Sand Dunes, and visiting the Tanot Mata Temple are all activities central to Jaisalmer tourism. However, the Dilwara Temples are located in Mount Abu, Sirohi district. They are famous Jain temples known for their extraordinary marble carvings. Consequently, they are not geographically associated with the desert city of Jaisalmer.

33. (1) I, II, and III only
Desert National Park is critical for conserving the Great Indian Bustard, a major wildlife attraction. Jaisalmer Fort is widely called Sonar Quila because its yellow sandstone glows like gold. Khuri village provides a more serene and authentic sand dune experience compared to the busier Sam dunes. The Desert Festival is a government-organized event, not exclusively managed by private hotel chains.

34. (1) Pushkar
Pushkar is home to one of the very few prominent temples in the world dedicated to Lord Brahma. This sacred site makes the town a major pilgrimage destination for Hindus globally. The temple dates back to the fourteenth century and is situated near the holy Pushkar Lake. Pilgrims visit throughout the year to offer prayers, especially during the auspicious Kartik Poornima period.

35. (3) Kartik Poornima
The Pushkar Fair, which combines religious rituals with a massive camel trade, occurs annually during the Hindu month of Kartik. The festivities culminate on Kartik Poornima, the full moon night. During this time, thousands of pilgrims take a holy dip in Pushkar Lake to attain

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54. (2) To provide affordable lodging and a first-hand experience of local culture with families.
The Paying Guest Scheme was introduced by the Rajasthan Department of Tourism to diversify accommodation options. Its main objective is to provide tourists with affordable lodging while allowing them to experience the local lifestyle and culture firsthand by staying with families. This initiative promotes cultural exchange and provides additional income for local households. It helps manage the high demand for peak rooms.

55. (1) A-iii, B-iv, C-i, D-ii
The Rajasthan Tourism Development Corporation operates several hotels across key destinations. Hotel Ghoomar is located in Jodhpur, catering to visitors exploring the Sun City. Hotel Moomal is a well-known property in Jaisalmer. Hotel Shikhar serves tourists in the hill station of Mount Abu. Hotel Kajri is situated in Udaipur, the City of Lakes. These state-run hotels offer standardized budget-friendly accommodation.

56. (1) It mandates that a rural guest house must have a minimum of 50 luxury rooms to qualify for registration.
The Rajasthan Rural Tourism Scheme 2022 focuses on small-scale, authentic experiences rather than large luxury hotels. It does not mandate a minimum of 50 luxury rooms; instead, it encourages small guest houses, agri-tourism units, and camping sites to boost local livelihoods. The scheme includes incentives like 100% stamp duty exemption to attract investment and showcase diverse village culture to tourists.

57. (3) Palace on Wheels
The Palace on Wheels was the first luxury tourist train launched in Rajasthan in 1982. It pioneered the concept of heritage rail travel in India by authoring royal coaches once used by the Maharajas. The train provides a week-long journey through iconic cities like Jaipur, Udaipur, and Jaisalmer. Its success inspired several other luxury trains across the country, establishing heritage rail tourism.

58. (3) I, II, III, and V only
The Rajasthan Tourism Development Corporation is involved in several key areas. It manages state-owned hotels, organizes cultural fairs, and provides transport facilities for sightseeing. It also collaborates with the Indian Railways to operate the Palace on Wheels. However, issuing international visas is a function of the central government. RTDC focuses primarily on infrastructure, promotion, and hospitality management within the state.

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59. (4) It is a tribal congregation held at the confluence of the Som, Mahi, and Jakham rivers.
The Beneshwar Fair is a major tribal festival held in the Dungarpur district at the sacred confluence of the Som, Mahi, and Jakham rivers. Often referred to as the 'Kumbh of the Tribals,' it attracts thousands of people from surrounding states. The event is deeply religious, featuring rituals at the Beneshwar Mahadev temple and cultural performances that showcase tribal heritage.

60. (2) Dune bashing and off-roading in Jaisalmer
Jaisalmer's vast and shifting sand dunes provide the perfect geographical advantage for dune bashing and off-roading activities. This adventure sport has become increasingly popular among domestic and international tourists. Other listed activities like white-water rafting or deep-sea diving are not feasible in the regional environments mentioned. Jaisalmer's unique topography makes it a premier destination for motorized adventure tourism in India.

61. (1) 1, 2, 3, 4
The geographical distribution of these sites spans the entire width of Rajasthan from west to east. Jaisalmer Fort is the westernmost point in the Thar Desert. Mehrangarh Fort in Jodhpur follows to the east. Amber Fort, located near Jaipur, is situated further east within the Aravalli hills. Finally, Keoladeo National Park in Bharatpur represents the easternmost destination in this longitudinal sequence.

62. (4) Padharo Mhare Desh
In 2019, the Rajasthan government revived the iconic tagline "Padharo Mhare Desh," which translates to "Welcome to My Land." This phrase replaced the previous marketing slogan "Jaane Kya Dikh Jaye." The decision was made to reconnect with the state's traditional hospitality and cultural roots. This classic tagline is well-recognized globally and embodies the welcoming spirit, which is core to tourism.

63. (1) Molela - Terracotta plaques and idols
Molela, a village near Nathdwara, is internationally famous for its unique terracotta craft. Artisans here create flat plaques and idols of folk deities using local clay, which are then sun-dried and fired. This craft is a major driver of rural tourism in the area. Other options wrongly associate crafts with villages; for example, blue pottery is centered primarily in Jaipur.

64. (1) I and II only
Under the central government's Swadesh Darshan Scheme, Rajasthan has seen development projects primarily in the Krishna Circuit and the Desert Circuit. The Krishna Circuit focuses on spiritual sites related to Lord Krishna, such as Nathdwara. The Desert Circuit aims to improve infrastructure in Jaisalmer, Bikaner, and Jodhpur. The Himalayan Circuit is not active as it is geographically restricted.

65. (3) 1978
The Rajasthan Tourism Development Corporation was established in 1978 as a nodal agency to develop tourism infrastructure. Although the Department of Tourism existed earlier for policy matters, RTDC was created to manage commercial operations like hotels and transport. It officially began its operations in April 1979. Over the decades, it has played a vital role in standardizing services and heritage promotion.

66. (1) Allowing large-scale commercial mining and heavy industries inside forest buffer zones.
The Rajasthan Eco-Tourism Policy 2021 aims to promote sustainable travel that conserves natural heritage and benefits local communities. It focuses on activities like nature trails and bird watching while strictly regulating human impact. Allowing large-scale commercial mining inside forest buffer zones would contradict these conservation goals. Therefore, industrial expansion in sensitive ecological areas is restricted under this specific policy framework.

67. (1) Statement I is correct but Statement II is incorrect
Pushkar is a major center for rose cultivation and the production of rose oil and water for export. However, the Pushkar Fair is not exclusively a religious gathering; it is equally famous for its massive camel and livestock trading. While the religious dips in the lake are important, the trade of thousands of animals is a core commercial component for visitors.

68. (1) I, II, and III only
Jhalana in Jaipur is correctly matched with leopard safaris, Mount Abu with trekking, and Sam Sand Dunes with parasailing and dune bashing. However, the Chambal River in Rajasthan is primarily known for its boat safaris to see gharials, rather than white-water rafting rapids. White-water rafting requires high-gradient mountain rivers, which are not present in the Rajasthan stretch of the river.

69. (3) Department of Tourism, Government of Rajasthan
The Department of Tourism, Rajasthan, is the primary body responsible for the training and licensing of tourist guides. It conducts periodic examinations to certify local, state, and regional-level guides. This regulation ensures that tourists receive accurate historical information and professional service. Licensed guides are trained in communication, history, and behavioral ethics, which helps maintain the quality and safety of visitor experiences.

70. (2) It offers a luxury hotel experience covering heritage and wildlife sites weekly.
The Palace on Wheels is successful because it combines luxury hospitality with a comprehensive travel itinerary. It allows tourists to visit multiple heritage and wildlife destinations across Rajasthan in a single week without the hassle of separate bookings. The train provides high-end amenities and personalized service, mimicking the royal lifestyle. This all-inclusive heritage experience appeals strongly to high-spending international and domestic tourists.

71. (4) Deccan Odyssey
Palace on Wheels, Royal Rajasthan on Wheels, and Heritage on Wheels are all luxury or heritage trains that have operated within Rajasthan to promote regional tourism. In contrast, the Deccan Odyssey is a luxury train primarily associated with the state of Maharashtra and the Konkan region. While it occasionally offers trans-continental routes, its core identity is focused on the Deccan plateau.

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72. (1) I, II, III, and IV only
Ajmer is home to the Dargah of Khwaja Moinuddin Chishti, Adhai Din Ka Jhonpra, and the Dargah of Miran Sahib on Taragarh hill. Galiakot houses the revered Dargah of Syedi Fakhruddin, a major site for the Dawoodi Bohra community. However, the Jama Masjid in Delhi was built by the Mughal Emperor Shah Jahan, not a Rajput king, making the fifth statement incorrect.

73. (2) 2000
Rajasthan became the first state in India to introduce a dedicated 'Tourist Police' force in August 2000. These personnel are stationed at major monuments, airports, and railway stations to assist visitors and prevent harassment. They receive special training in language and tourist laws. This initiative significantly improved the safety environment for travelers, helping Rajasthan maintain its reputation as a tourist-friendly destination.

74. (1) The Rajasthan Tourism Unit Policy strictly prohibits the conversion of any ancestral haveli into a commercial hotel.
The Rajasthan Tourism Unit Policy actually encourages and provides incentives for the conversion of ancestral havelis into heritage hotels. This is a key strategy for preserving architectural heritage and boosting rural tourism. The state also focuses on air connectivity, RTDC transport services, and wayside amenities to support growth. Prohibiting the commercial reuse of havelis would hinder the successful heritage hospitality model.

75. (4) Ranthambore National Park
Ranthambore National Park perfectly matches this itinerary as it contains a tenth-century medieval fort surrounded by dense forests. It is also famous for the Trinetra Ganesh Temple, which is located within the fort complex and attracts many pilgrims. Most importantly, it is one of India's premier tiger reserves, offering tourists the best opportunity to photograph Bengal tigers in their natural habitat.

76. (2) Heritage hotels are charged industrial electricity tariffs rather than higher commercial tariffs.
To support the heritage hospitality sector, the Rajasthan government treats these hotels as industrial units rather than commercial ones. This allows them to pay lower industrial electricity tariffs, significantly reducing their operational costs. This policy incentive encourages owners to maintain large historic properties that would otherwise be economically unviable. Other listed incentives, like free airfare, are not part of official state tourism policies.

77. (3) A historic property, castle, or haveli built before 1950 converted into a hotel.
According to official guidelines, a 'Heritage Hotel' must be located in a property built before 1950, such as a castle, fort, palace, or haveli. These buildings must retain their traditional architectural features and historical character after being converted into hospitality units. Newly constructed buildings designed with traditional styles do not qualify. This classification ensures the preservation of authentic structures and cultural tourism.

78. (4) Junagarh Fort - Aravali Peak
Mehrangarh Fort is built on Chidiya-Tunk hill, Amber Fort is located in the Aravalli range, and Jaisalmer Fort stands on Trikuta Hill. However, Junagarh Fort in Bikaner is unique because it is not built on a hill; it is a desert fort constructed on flat ground. Therefore, associating it with an Aravalli peak is geographically incorrect. This distinction makes it an exception.

79. (2) Spring
The Mewar Festival is celebrated in Udaipur to welcome the arrival of the spring season. It coincides with the festival of Gangaur and is marked by vibrant processions, traditional music, and dance performances. Women carry idols of Gauri to Lake Pichola for immersion rituals. The festival showcases the rich cultural heritage of the Mewar region and attracts numerous tourists witnessing colorful traditions.

80. (2) Ecological degradation and waste management issues due to unregulated camp clusters.
The sustainability of desert tourism in areas like Sam Sand Dunes is threatened by unregulated

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Consequently, this model preserves the unique architectural heritage of the region while creating modern economic value for local communities.

9. (3) Mehrangarh Fort
While Mehrangarh Fort in Jodhpur is a magnificent structure, it was not included in the 2013 UNESCO World Heritage List of Hill Forts. The designated group specifically consists of Chittorgarh, Kumbhalgarh, Ranthambore, Amber, Jaisalmer, and Gagron. These six forts were selected for their collective representation of Rajput military architecture. Despite its historical importance, Mehrangarh remains on the tentative list.

10. (1) A-ii, B-i, C-iv, D-iii
Historical forts are located across various districts, each representing unique regional history. Bhatner Fort is situated in Hanumangarh, known for its ancient clay-brick construction. Junagarh Fort is the pride of Bikaner, built on the plains. Taragarh Fort stands prominently in Bundi, featuring impressive murals. Lohagarh Fort, an invincible structure made of mud, is located in the eastern district of Bharatpur.

11. (4) Hawa Mahal
Umaid Bhawan Palace, Rambagh Palace, and Taj Lake Palace are all renowned heritage hotels that offer luxury hospitality services. In contrast, Hawa Mahal serves strictly as a historical monument and museum under state management. It does not provide residential or hotel facilities to the public. This structural distinction makes it the odd one among the listed iconic heritage-themed hospitality properties.

12. (3) I, II, and IV only
Nahargarh Fort, Albert Hall Museum, and Jantar Mantar are prominent landmarks located within the city of Jaipur. Nahargarh offers panoramic views of the pink city from the Aravalli hills. Albert Hall is the oldest museum in the state. Jantar Mantar is a UNESCO-listed astronomical observatory. Saheliyon Ki Bari, however, is a famous garden and fountain complex located in Udaipur.

13. (3) It exhibits an exceptional urban plan based on ancient Hindu grid patterns and architecture.
The Walled City of Jaipur received UNESCO World Heritage status in 2019 due to its exceptional urban planning. It was the first planned city in medieval India, designed using ancient Vedic principles and a grid system. The layout integrates traditional architectural styles with commercial and residential functionality. Its uniform pink color and organized markets reflect a unique fusion of local design.

14. (4) Brihat Samrat Yantra
The Brihat Samrat Yantra is the largest astronomical instrument in the Jantar Mantar observatory in Jaipur. Standing nearly 27 meters tall, it functions as a giant sundial capable of measuring time with an accuracy of two seconds. Its shadow moves at a constant rate, providing precise readings. This monumental structure showcases the advanced scientific and mathematical understanding of the eighteenth-century.

15. (1) Amber Fort, Jantar Mantar, Hawa Mahal, Albert Hall Museum
The landmarks were constructed across different eras of Rajput and British-influenced history. Amber Fort dates back to the sixteenth century, predating the founding of Jaipur. Jantar Mantar was completed around 1734 during the reign of Sawai Jai Singh II. Hawa Mahal was built later in 1799 by Sawai Pratap Singh. Finally, the Albert Hall Museum was opened in 1887.

16. (2) Vidyadhar Bhattacharya
Vidyadhar Bhattacharya was the principal architect and town planner responsible for designing Jaipur. Under the patronage of Maharaja Sawai Jai Singh II, he implemented a grid-based urban layout. He combined principles of Vastu Shastra with elements of European and Persian architecture. His systematic approach resulted in the city's unique nine-square division, which facilitated organized commerce, housing, and defensive systems.

17. (1) A-iii, B-i, C-ii, D-iv
Different rulers contributed to Jaipur's architectural heritage across centuries. Maharaja Sawai Jai Singh II established the Jantar Mantar observatory. Maharaja Sawai Pratap Singh

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